COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

BULLETIN No. 114.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901,

BY THE

Pennsylvania Department of Agriculture,

FROM JANUARY 1st, 1903, TO AUGUST 1st, 1903.

WM. STANLEY RAY,
STATE PRINTER OF PENNSYLVANIA.
1903.

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AN ACT

To regulate the manufacture and sale of commercial fertilizers.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered or exposed for sale, for manurial purposes, within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the place of manufacture, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid and of insoluble phosphoric acid: Provided, That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents shall be exempt from the provisions of this act.

Section 2. That every manufacturer or importer of commercial fertilizers as specified in section one of this act shall, on or before the first day of January next ensuing, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of said fertilizer sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he shall pay to the Treasurer of the State the sum of fifteen dollars for each and every brand of such commercial fertilizer sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars, as aforesaid. Every said manufacturer shall, at the same time, file with the Secretary of Agriculture a copy of the analysis required by section one of this act, and shall then be entitled to receive from the Secretary of Agriculture a certificate showing that the provisions of this act have been complied with.

Section 3. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representatives, and to have them analyzed, and to publish the results for the information of the public.

Section 4. The Secretary of Agriculture, and such assistants, agents, experts, chemists, detectives and counsel as he shall duly authorize for the purpose, shall have full access, ingress and egress to

all places of business, factories, farms, buildings, carriages, cars and vessels, used in the manufacture, transportation or sale of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and to take therefrom samples for analysis upon tendering the value of said samples.

Section 5. Any person selling, offering, or exposing for sale, any commercial fertilizer without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents than is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be guilty of misdemeanor, and on conviction shall forfeit a sum not less than twenty-five and not exceeding one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs and fines recovered shall be paid to him or his duly authorized agent, and by him be immediately paid into the State Treasury, to constitute a special fund to be used in accordance with the provisions of section six of this act.

Section 6. The money paid into the Treasury under the provisions of this act shall constitute a special fund, from which the cost of selecting samples, making analyses, and other expenses incident to the carrying into effect the provisions of this act, shall be paid: Provided, That the total amount thus expended shall in no case exceed the amount paid into the Treasury.

Section 7. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime and wood ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of December, one thousand nine hundred and one. All acts or parts of acts inconsistent with this act are hereby repealed, except that existing laws are to continue in force until this act goes into effect.

Approved—The 25th day of March, A. D. 1901.

LETTER OF TRANSMITTAL.

State College, Pa., July 29, 1903.

Hon. N. B. Critchfield, Secretary Department of Agriculture, Harrisburg, Pa.:

Dear Sir: I have the honor to transmit herewith a tabulated statement of the analyses of the fertilizer samples, submitted by the agents of the Department for the period from January 1, 1903, to this date. A parallel statement of guaranties, filed by the manufacturers, accompanies the report. There is prefixed a review of the wholesale markets in fertilizer ingredients during the principal purchasing season affecting this year's trade, and an exposition of the principles adopted in estimating the comparative commercial value of the several brands analyzed.

Very respectfully,

WM. FREAR.

FERTILIZER VALUATIONS—1903.

The object of an official valuation of commercial fertilizers is to enable the consumer to judge approximately whether he has been asked to pay for a given brand more than the fertilizing ingredients it contains and market conditions prevailing at the time would warrant. It is clear, therefore, that no attempt is made in this valuation to indicate whether the fertilizer valued possesses a greater or less crop-producing capacity than another fertilizer; but only whether it is higher priced than another of the same general composition.

For this purpose it must be so computed as to include all the elements entering into the cost of a fertilizer as it is delivered to the consumer. These elements may be conveniently grouped as follows:

1. The wholesale cost of the ingredients.

2. The jobbers' gross profit on the sale of the ingredients; this includes office expenses, advertising, losses, etc.; for the purpose of the present computation it may be assumed that the sum of this gross profit and the wholesale cost of the ingredients, is equivalent to the retail price of the single ingredients near the wholesale markets in ton lots of original packages for cash.

3. The expense and profit of mixing: This item applies only to complete fertilizers, rock and potash, and ammoniated rock; not to dissolved or ground bone, or to dissolved rock.

4. The expense and profit of bagging.

5. Agents' commission: This item includes not only the commission proper, but every advance in price due to the sale of the goods through an agent in small quantities on time, rather than directly to the consumer in ton lots for cash.

6. Freight from the wholesale market to the point of delivery.

The valuations for 1902 were based:

1. Upon the wholesale prices from September 1, 1901, to March 1, 1902, of the raw materials used in fertilizer manufacture, the quotations of the New York market being adopted for all materials except acidulated phosphate rock and ground bone.

2. Upon an allowance of 20 per cent. of the wholesale prices, above mentioned, to cover jobbers' profits.

By adding the 20 per cent. allowed for jobbers' gross profit to the

wholesale price of the several raw materials, the retail price in original packages at the jobbers' warehouse is obtained.

Since the amount of the several valuable fertilizing constituents in the various raw materials is known, it is a simple matter to determine the corresponding retail value per pound of the valuable fertilizing constituents yielded by each raw material. A schedule of these pound values affords a convenient basis of computation of the value per ton of various fertilizers, whose composition is ascertained by analysis.

The values assigned, for the present, to the other elements in the cost of the fertilizer at the point of delivery are:

3. For mixing, $1.00 per ton.

4. For bagging, $1.00 per ton, in all cases except those in which the article was sold in original package; the cost of the package being, in such cases, included in the wholesale price.

5. For agents' commissions, 20 per cent. of the cost of the goods f. o. b. at the jobbers' or mixers' warehouse.

6. For freight, $2.00 per ton; the cost of the freight in lots of twelve tons or over, from the seaboard to Harrisburg, averaging $1.88 per ton.

The following valuation of dissolved South Carolina rock illustrates the method:

Phosphoric acid.	Per cent.	Weight per ton.	
Soluble,	11.50	230 lbs. at 3c.	$6 90
Reverted,	2.50	50 lbs. at 2½c.	1 25
Insoluble,	1.00	20 lbs. at 1½c.	30
Retail cash value of ingredients,			$8 45
Bagging,			1 00
Cash value of goods ready for shipment,			$9 45
Agents' commission, 20 per cent.,			1 89
Freight,			2 00
Commercial value per ton,			$13 34

It is not to be expected, of course, that the valuations thus computed will precisely represent the fair price to be charged for a brand in each locality and in every transaction. Market conditions, competition, distance from factory, all introduce minor variations. Nevertheless, to make the approximation reasonably close, the average valuation of a given class of goods ought to agree closely with its ascertained average selling price. Whenever such an agreement is no longer obtained by the use of a schedule, it is evi-

dent that the schedule of retail values of the constituents, or the added allowances for mixing, etc., requires revision.

It is needful to note here another factor greatly affecting the practical accuracy of these approximations. Their computation would offer little difficulty and their usefulness be far greater, if, by the ordinary methods of analysis, the exact nature of the ingredients used to supply the several fertilizer constituents, were capable of certain determination. This is, however, possible, to-day, to only a limited extent. The valuations are, therefore, based on the assumption that the fertilizers are uniformly compounded from high quality ingredients, such as are commonly employed in the manufacture of fertilizers of the several classes. Consumers should carefully avoid the error of accepting such valuations as infallible; they are not designed to be used for close comparisons of single brands, but only to indicate whether the price asked for a fertilizer is abnormal, assuming good quality for the ingredients used. From this it is clear that, except as high freights may require, the selling price of a brand should not far exceed the valuation; but that a fertilizer may be made of inferior materials and yet have a high valuation.

The valuations used during 1901 were modified for use during 1902 in accordance with the changes in wholesale prices of fertilizing ingredients and to make the valuations more closely follow the selling price.

The following comparative statement shows the valuations and selling prices of the several classes of fertilizers during 1900 to 1902:

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1900.				
Complete,	276	24.61	25.38	—0.77
Rock-and-potash,	48	14.71	17.25	—2.64
Dissolved bone,	2	30.87	26.00	4.87
Ground bone,	30	25.91	28.42	—2.51
Dissolved Rock,	56	13.48	13.57	—0.09
Fall, 1900.				
Complet,e	130	24.00	23.22	0.81
Rock-and-potash,	33	14.63	18.11	—3.48
Dissolved bone,	2	22.74	23.50	—0.76
Ground bone,	17	26.87	28.73	—1.86
Dissolved rock,	31	13.11	13.96	—0.85
Spring, 1901.				
Complete,	291	24.76	23.92	0.84
Rock-and-potash,	60	14.60	16.20	—1.60
Dissolved bone,	1	29.00	28.00	1.00
Ground bone,	44	28.71	27.59	1.12
Dissolved rock,	49	13.51	13.90	—0.39
Fall, 1901.				
Complete,	179	23.75	22.28	1.47
Rock-and-potash,	42	14.23	16.09	—1.86
Dissolved bone,	5	23.36	23.91	—0.55
Ground bone,	33	27.69	25.94	1.75
Dissolved rock,	49	13.82	13.18	0.64
Spring, 1902.				
Complete,	289	25.33	24.10	1.23
Rock-and-potash,	66	15.05	16.45	—1.40
Dissolved bone,	2	17.35	16.50	.85
Ground bone,	29	26.80	28.52	—1.72
Dissolved rock,	59	13.49	13.73	—.24
Fall, 1902.				
Complete,	229	23.31	21.83	1.48
Rock-and-potash,	62	14.46	15.98	—1.52
Dissolved bone,	6	27.08	25.30	1.78
Ground bone,	27	27.51	28.09	—.58
Dissolved rock,	56	13.70	13.47	.23

The general tendencies of the wholesale market may be judged from the following comparative statement, obtained from the weekly reports of the Oil, Paint and Drug Reporter, of New York City, showing the average wholesale prices of fertilizer raw materials from September 1, 1901, to March 1, 1902, and from September 1, 1902, to March 1, 1903.

Wholesale Prices of Fertilizer Ingredients, New York: Oil, Paint and Drug Reporter.

Substance.	Amount priced.	Average price Sept. 1, 1901, to March, 1902.	Average price Sept. 1, 1902, to March, 1903.	Prices, Sept.-Feb., 1902-3, in per cent. of prices 1901-2.
Sulfate of ammonia,	Cwt.,	2.8324	3.0434	107.6
Nitrate of soda,	Cwt.,	1.9889	1.9873	99.9
Dried blood, H. G.,	Unit (20 lbs.),	2.2375	2.4969	111.6
Concentrated tankage,	Ton,	16.25	15.50	95.4
Rough bone,	Ton,	18.25	17.00	93.2
Ground bone,	Ton,	20.50	20.50	100.0
Bone meal,	Ton,	17.72	19.72	111.3
Fish guano (dry),	Ton,	24.50	27.35	111.6
Fish guano (acid),	Ton,	13.25	14.23	107.4
Refuse bone-black,	Ton,	19.00	18.06	95.1
Phosphate rock (Charleston),	Ton,	7.48	9.125	122.0
Phosphate rock (Tennessee),	Ton,	3.328	3.953	118.8
Acid phosphate,	Unit (20 lbs.),	.625	.625	100.0
Double manue salts,	Cwt.,	1.13	1.1025	97.6
Sulfate of potash,	Cwt.,	2.125	2.11	99.3
Kainit,	Ton,	9.05	9.05	100.0
Muriate of potash,	Cwt.,	1.8475	1.8325	99.2
Sulfuric acid 66 deg. B.,	Cwt.,	1.573	1.319	83.9

In ammoniates, such as dried blood, the unit is of ammonia, of which 82.35 per cent. is nitrogen; in acid phosphates the unit is of phosphoric acid (phosphorus pentoxid).

The nitrogenous materials and animal sources of phosphoric acid show considerable variations from last year's prices. Sulfate of ammonia, dried blood, and fish guano have advanced markedly, while in the case of concentrated tankage, refuse bone-black and rough bone there has been a distinct falling off; nitrate of soda and ground bone have remained stationary. Bone meal prices have advanced 11 per cent. over last year's figures. The following data are from the monthly reports of Thos. J. White & Co., fertilizer brokers, Baltimore, Md., giving wholesale quotations upon ammoniates:

Wholesale Prices of Ammoniates: Reports of Thos. J. White & Co., Baltimore, Md.

	Prices, Sept. to March, 1901-1902.	Prices, Sept. to March, 1902-1903.
Sulfate of ammonia, per cwt.:		
Foreign, f. o. b. Baltimore,	2.79	§3.05
Nitrate of soda, per cwt.,	.....	1.9275
Ground blood, f. o. b. Chicago, per unit ammonia,	2.015	2.2925
Concentrated tankage, f. o. b. Chicago, per unit ammonia,	1.875	2.085
Crushed tankage, f. o. b. Chicago, per ton:		
10½ per cent. ammonia, 15 per cent. bone phosphate,	.....	†23.75
10 per cent, ammonia, 15 per cent. bone phosphate,	20.67	.....
10 per cent. ammonia, 10 per cent. bone phosphate,	19.49	†22.75
Crushed tankage, c. a. f. Baltimore, per unit ammonia,	2.26	.....
9 per cent .ammonia, 20 per cent. bone phosphate,	.....	2.505
Crushed tankage, f. o. b. Kansas City, per unit ammonia:		
8 per cent. ammonia, 25 per cent. bone phosphate,	.....	1.95
Ground tankage, f. o. b. Chicago, per ton:		
10½ per cent. ammonia, 15 per cent. bone phosphate,	.....	*24.53
10 per cent. ammonia, 10 per cent. bone phosphate,	.....	**23.00
6 per cent. ammonia, 25 per cent. bone phosphate,	.....	‡14.75
9½ per cent. ammonia, 20 per cent. bone phosphate,	.....	††22.90
Dried fish, f. o. b. factory, per unit ammonia,	†2.175	2.40
Hoof meal, f. o. b. Chicago, per unit ammonia,	.....	‡‡2.16

§c. i. f. Baltimore and New York.
†Quotations for September only.
*September quotations lacking.
**Quotations for September and February lacking.
‡Quotations for January and February only.
††Quotations for February only.
‡‡Quotations for September and October lacking.

These figures show a marked increase in the price of ammoniates over last year.

The Engineering and Mining Journal, of New York City, gives quotations of nitrate of soda for January, 1902, $1.95@ $1.97½ per cwt. Following this, prices increased, reaching a maximum in April of $2.40 for spot and $2.05 for futures. From this time on prices became lower, the year closing at $1.97½ for spot and $1.85 for futures.

In case of sulfate of ammonia, the average price for the year (1902) was $3.00 for spot and $2.97 for shipments. These figures confirm those previously quoted.

The following summary from the Engineering and Mining Journal shows the prices of rock phosphates. The general tendency to centralize management has been in evidence in the phosphate industry, and, as a result, important changes have been brought about. During 1902 there were produced 1,580,997 long tons of all grades of phosphates as against 1,503,623 tons in 1901. The shipments for 1902 were almost 50,000 tons larger than the production. The export trade in 1902 amounted to 827,230 long tons, as compared with 750,000 tons in 1901.

Florida Phosphate.—The year 1902 shows an increase in production of about 11.6 per cent. over 1901. The exports of high grade rock in 1902 were 484,000 long tons, as against 424,120 tons in 1901. None has been sent to domestic markets. The average price for the year f. o. b. Fernandina was $6.55, as against $6.83 in 1901.

The production of land pebble was about 368,845 long tons, an increase of 115,887 tons over the previous year. Land pebble was quoted at $3.00 to $3.25 throughout the year, making an average of $3.13, as compared with $3.79 in 1901.

During January and February of this year, high grade rock was quoted at $6.00 to $6.50 and land pebble at $3.00 to $3.25.

Peace River phosphate was produced to the extent of 20,000 to 25,000 tons, the Americal Agricultural Chemical Company controlling the field and taking the bulk of the output.

Tennessee Phosphates.—The total shipment in 1902 was 437,500 tons, of which 139,500 tons were for export. Owing to an understanding between the larger companies in the Mt. Pleasant fields, prices f. o. b. were better than in 1901. Export prices, owing to keen competition with Florida rock, have suffered somewhat. In January to April export rock (78-82 per cent. bone phosphate of lime) was quoted at an average of $3.50 per ton f. o. b. Mt. Pleasant; in May, at $3.75; June, $3.25 to $3.75, and thereafter at $3.25 to $3.50, making an average for the year of $3.47 as against $3.33 in 1901.

Domestic high grade rock (78 per cent.) sold, f. o. b., Mt. Pleasant, between $3.00 and $3.25, making an average of $3.13, compared with $2.97 in 1901. Domestic 75 per cent. rock brought $2.75 to $3.00, or an average of $2.88 f. o. b., as against $2.74 for the previous year.

The 70-74 per cent. grade sold at $2.10 to $2.40, which compares with $2.00 to $2.75 in 1901.

Prices on export rock for January and February of this year were $3.25 to $3.50, and for domestic grades $3.00 for 78 per cent., and $2.75 to $3.00 for 75 per cent. rock.

In South Carolina production has been curtailed owing to smaller consumption and the dismantling of large works. Shipments have decreased as compared with 1901. Prices f. o. b. Ashley River, for land rock, averaged $3.25 per ton; river rock, $1.75 to $3.00, both prices showing a decrease from last year. During January and February of this year, land rock was quoted at $3.25 and river rock at $2.75 to $3.00.

Raw Materials of Acid Manufacture.—The Engineering and Mining Journal comments as follows:

Brimstone.—Consumption in the United States has increased. It is estimated that the annual imports of crude brimstone into this

country amount to 36 per cent. of the total exported from Sicily. The demand for brimstone in the fertilizer acid trade is being satisfied by pyrites, which furnishes the sulphur at a lower cost. Prices in 1902 show an increase over those for the previous year. The average price of spot brimstone was $23.54 for best unmixed seconds and $21.65 for best thirds, being an increase of 59 cents per ton for best unmixed seconds and 95 cents for best thirds.

Pyrites.—The high price of brimstone has caused increased consumption of pyrites. Domestic production and imports have increased, prices continuing firm. The total imports of pyrites in 1902, according to the Engineering and Mining Journal, were about 410,500 long tons, an increase of 3 per cent. Spanish pyrites fluctuated between 12 and 13½ cents on the basis of 46-51 per cent. of sulphur. Domestic pyrites sold at $5.00 per ton for lump ore and 10 cents per unit for "fines," f. o. b. Mineral City, Va., or Charlemont, Mass. The American pyrites contains on an average 42 to 44 per cent. of sulphur. The price of raw materials for acid manufacture have apparently changed but little.

Sulphuric acid has remained firm throughout the year. Wholesale price quoted by the combination have been, for 66 degree acid, $1.20; 60 degree, $1.00 to $1.05 per 100 lbs., f. o. b. New York; for 50 degree acid in bulk, $13.50 to $14.00 per ton; 60 degree, $18.00; 66 degree, $21.00.

New York wholesale quotations for acid phosphate, per unit of available phosphoric acid, were, according to the Oil, Paint and Drug Reporter, during 1901-2, 62.5 cents; during 1902-3 this price remained stationary.

Potash Salts.—The reports of the U. S. Bureau of Statistics show the following entries for consumption during the fiscal years 1901 and 1902:

	1901.	1901.
Muriate (pounds),	138,561,091	140,124,418
Kieserit, kainit, etc. (tons),	187,470	228 112

The community of interest agreement between the German Kali Syndicate and the Virginia-Carolina Chemical Co., makes it possible, according to the Engineering and Mining Journal, for the latter company, as well as the American Agricultural Chemical Company, to obtain supplies of potash salts at advantageous rates. These two concerns, being the largest consumers in America, no change has been made in the published schedule of prices from 1901. On the basis of large lots sold through brokers for cash and delivered at Boston, New York or Philadelphia, the schedules of the syndicate on the same basis as heretofore are as follows:

Salt.	February, 1903.	After March 1, 1903.
Muriate:		
(80 to 85 per cent., 80 per cent. basis), cwt.,	$1 80	$1 83
(95 per cent., 90 per cent. basis), cwt.,	1 83	1 86
Sulfate:		
(90 per cent., 90 per cent. basis), cwt.,	2 08	2 11
(96 per cent., 90 per cent. basis), cwt.,	2 11	2 14
Double manure salt (48 to 50 per cent. basis), cwt.,	1 09	1 12
Kainit (12.4 per cent. actual potash) per ton at point of shipment,	8 80	.....
Sylvinite (per unit potassium sulfate),	38-39	.....
Manure salt (20 per cent. potash), per unit potash,	62-64	.....

This trade is so managed that, before March 1, nearly all wholesale deliveries of the year are contracted for.

Composition of Raw Materials.—In order to form a correct idea of the cost per pound of the fertilizer constituents of these materials, it is needful to determine their composition; or, in other words, the quantities of valuable constituents each contains. The following table shows the composition of the raw materials used in the manufacture of fertilizers. Very few analyses of these materials, with the exception of ground bone and dissolved rock, have been made in Pennsylvania. The figures in the following table include the averages of the results of analyses made in Connecticut, Massachusetts, New Jersey and Pennsylvania during the past year, except in the case of ground bone and dissolved rock phosphates, where Pennsylvania results alone are included.

Composition of Non-Acidulated Fertilizer Ingredients (Per Cent.).

	Number of sample analyzed.	Nitrogen.	Potash.	Total phosphoric acid.
Sulfate of ammonia,	3	20.91	.....	.....
Nitrate of soda,	12	15.61	.....	.....
Dried blood,	5	11.40	.....	.....
Ground bone,	27	3.23	.....	23.47
Tankage,	15	5.41	.....	12.57
Ground fish,	22	7.77	.....	7.20
Cotton-seed meal,	36	7.08	1.90	3.15
Castor pomace,	3	5.24	1.00	1 90
Sulfate of potash, high grade,	3	.....	49.36	.....
Muriate of potash,	25	.....	50.34	.....
Kainit,	3	.....	12.74	.....
Double sulfate of potash and magnesia,	5	.....	25.32	.....

Composition of Acidulated Fertilizer Ingredients (Per Cent.).

	Number of samples analyzed.	Total phosphoric acid.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.
Dissolved bone-black,	2	17.13	13.42	1.91	1.73
Dissolved bone,*	6	15.86	3.65	7.22	4.99
Dissolved rock phosphate,	115	16.00	9.61	4.80	1.59

*Also contains 2.35 per cent. nitrogen.

Comparing these figures with those of previous years and considering only those cases where a considerable number of analyses are available, the results seem to indicate no great change in the composition of raw materials used in fertilizer manufacture.

Cost per Pound of Fertilizer Constituents.—With the composition of these raw materials and their price per ton, hundred weight, or other unit of measure as a basis, the wholesale cost per pound of the valuable constituents can be readily calculated. In many cases the ammoniates are quoted "per unit of ammonia," the term unit being equivalent to per cent.; in goods sold by the ton of 2,000 lbs., the unit is equal to 20 lbs., and 20 lbs. of ammonia contain 16.47 lbs. of nitrogen.

In the case of refuse bone-black, unacidulated, the mean, 28.25 per cent. of phosphoric acid, is assumed to represent the average material on the market.

Phosphate rock is sold by the ton of 2,240 lbs., and on the basis of the bone phosphate of lime it contains, with drawbacks for injurious constituents. Bone-phosphate of lime contains 45.8 per cent. of phosphoric acid; therefore, each per cent. of bone-phosphate in a long ton is equivalent to 22.4 lbs. and contains 10.26 lbs. of phosphoric acid.

In the wholesale trade, dried blood, azotine, concentrated tankage and hoof meals are usually sold on the basis of ammonia, disregarding the phosphoric acid present.

Insoluble phosphoric acid in dissolved rock is likewise omitted from consideration, contracts being based solely upon the "available" phosphoric acid; nor in rock phosphates is any claim made for the small quantities of nitrogen and potash they contain, nor in dissolved bone for the potash present.

Under these conditions, the wholesale cost per pound in New

York of the valuable constituents of such materials as furnish but a single fertilizing element, these materials being assumed to be in the state of preparation and in the packing in which the manufacturer purchased them, are given in the following table; also, a figure representing a fair retail price at the factory, the materials having undergone no change in treatment or packing and the allowance for expense and profit in retailing being 20 per cent.:

Wholesale Cost Per Pound of Fertilizer Constituents (New York).
I. Ingredients Supplying One Constituent.

Material.	Constituent Valued.	Wholesale price—cents.	Wholesale price plus 20 per cent.
Sulfate of ammonia,	Nitrogen,	14.58	17.50
Nitrate of soda,	Nitrogen,	12.73	15.28
Dried blood, high grade,	Nitrogen,	15.16	18.19
Concentrated tankage,	Nitrogen,	9.41	11.29
Refuse bone-black,	Phosphoric acid, total,	3.20	3.84
Phosphate rock:*			
(Peace river, 60 per cent.),	Phosphoric acid, total,	.375	.45
(Tennessee, 78 per cent.),	Phosphoric acid, total,	.53	.67
(South Carolina, 60 per cent.),	Phosphoric acid, total,	3.13	3.76
Acid phosphate,	Phosphoric acid available,	4.20	5.04
Double manure salts,	Potash,	4.28	5.14
Sulfate of potash,	Potash,	3.56	4.27
Muriate of potash,	Potash,	3.55	4.26
Kainit,	Potash,		

*The prices of phosphate rock are f. o. b. at the respective points of shipment, not New York, and are taken from the reports of the Engineering and Mining Journal. The prices for potash are taken from the schedule of the Syndicate and those of the remainder from the Oil, Paint and Drug Reporter.

The quotations for bone are given without specific reference to quality, so that it is impossible from these data to fairly apportion their several wholesale values to the nitrogen and phosphoric acid contained in this material. As compared with tankage, the general tendency is to assign a higher commercial rating to the phosphoric acid in bone and to the nitrogen a rating not very different from that given in tankage. The quotations of Thos. J. White & Co. show an average wholesale rate in Baltimore during September, 1902, to March, 1903, for crushed tankage to have been $2.505 per unit of ammonia and $0.10 per unit of bone phosphate of lime. This is equivalent to $3.04 per unit of nitrogen and $0.218 per unit of phosphoric acid. The average composition of the ground bone and bone meal samples analyzed last fall in Pennsylvania was: Phosphoric acid, 23.47 per cent.; nitrogen, 3.23 per cent. The prepared bone contains less fat and moisture and often less nitrogen than the ordinary "rough bone," but these differences tend, in a manner, to neutralize each other.

Assuming for the rough bone quoted in the New York market the same composition as the bone meal sold in Pennsylvania and for the value of the nitrogen $3.04 per unit, the values per pound of the several constituents would be:

Wholesale Cost per Pound of Fertilizer Constituents, New York.
II. Bone.

Grade.	Constituent Valued.	Wholesale price.	Wholesale price, plus 20 per cent.
Rough bone,	Nitrogen,	15.2	18.24
	Phosphoric acid,	1.53	1.84
Ground bone,	Nitrogen,	18.33	22.0
	Phosphoric acid,	1.85	2.22

The method of computation here used, applied to the present case in which a drop in the price of the entire raw material is noted, with a concurrent rise in the value of the nitrogen, judged by the quotations for tankage, results, of course, in an abnormal depression of the cost value computed for phosphoric acid. It must not be overlooked, therefore, that this indirect method of computation has very pronounced limitations to its use.

The average ground bone and bone meal on the retail market are probably inferior in composition to the rough bone on the wholesale market, hence, these figures tend to be too high. Direct estimation of the wholesale pound values of acidulated bone (animal bone) cannot be made, as there are no wholesale data available for this purpose; for this computation dependence must be placed upon the retail selling prices.

Valuations in Neighboring States.

It is desirable, from all points of view, that the schedules of valuation throughout a district in which similar market conditions prevail, should differ as little as possible. It has been our practice in the past, to conform our schedule to that adopted after very careful co-operative study of market conditions for each year, by the New England States and New Jersey, except where the peculiar conditions of our market have made the valuations diverge too largely from the actual selling prices, as in the case of ground bone and dissolved rock phosphates. The schedules for these States for 1902 and 1903 are as follows:

Trade Values Adopted by the New England States and New Jersey.

	Cents per Lb.		Values of 1903 in per cent. of those of 1902.
	1902.	1903.	
Nitrogen:			
In ammonia salts,	16½	17½	106.1
In nitrates,	14	15	107.1
In dry and fine ground fish,	16½	17	103
In meat, blood and mixed fertilizers,	16½	17	103
In fine ground bone and tankage,	16½	16½	100
In coarse bone and tankage,	12	12	100
Phosphoric acid:			
Water soluble,	5	4½	90
Citrate soluble,	4½	4	88.9
In cotton-seed meal, castor pomace and wood ashes,	4	4	100
In dry, fine ground fish, bone and tankage,	4	4	100
In coarse fish, bone and tankage,	3	3	100
In mixed fertilizers, insoluble,	2	2	100
Potash:			
In forms free from muriate (chlorid),	5	5	100
As muriate,	4¼	4¼	100

Upon a careful consideration of the changes and tendencies of the wholesale prices of fertilizer ingredients and of the discrepancies occurring since the adoption of the 1902 schedule of valuation, it has been decided that the schedule for use during 1903 should be the same as that adopted for the use of New Jersey and New England except at two points.

For reasons fully discussed in earlier bulletins, it is needful to include in the Pennsylvania schedule of valuations, a distinct set of values for phosphoric acid derived from rock as contrasted with that derived from animal materials. Reference to the tables, given on an earlier page, showing the wholesale cost of a pound of phosphoric acid, will make it plain that when it comes from phosphate rock, it costs the fertilizer maker about one-half of a cent at the mines, on the Atlantic seaboard; when from refuse bone-black, delivered at New York, 3.2 cents; when from tankage, about 1.1 cents; and from bone 1.85 cents.

There is nothing to indicate that, after acidulation, the available phosphoric acid from bone is at all better for the crop than that from a good rock lime phosphate. But so long as the consumer is persuaded that bone phosphoric acid is worth more for his crop than an equal weight of rock phosphoric acid, just so long will the manufacturer of fertilizers be able to command a higher price for those fertilzers reputed to derive their phosphoric acid from bone, and just so long will he, in turn, be obliged to pay more for it on the wholesale market. Now, in some States, the volume of rock phos-

phoric acid used is relatively small and the need for its separate valuation not apparent; in other States it predominates to the almost entire exclusion of bone phosphoric acid, so that no distinct valuation for the latter is required; but in Pennsylvania both occupy important positions upon the market and each requires its own set of values.

Despite the advance in the market quotations for phosphate rock, brimstone and pyrites, prices of sulfuric acid, though fluctuating less than during 1901, were on the average lower than in that season, and the New York quotations for acid phosphate remain unchanged. The fact that the two great fertilizer combinations mine a large fraction of their own phosphates, relieves their products from much of the speculative element of variation in value.

In view of this condition and of the close concordance of computed valuations of dissolved rock and the ascertained average selling price during the fall of 1902, the schedule of values used in 1902 for rock phosphoric acid have been adoped for 1903.

For similar reasons, nitrogen and phosphoric acid in ground bone are valued at lower rates in Pennsylvania than in New England. Owing to the slight changes in wholesale prices for rough bone and the fairly concordant agreement between the computed valuation for ground bone on the retail market last fall, and the ascertained average selling price, the schedule of valuations for bone constituents used in 1902 have also been adopted for 1903.

The schedule for 1903 as a whole is as follows:

Schedule of Values for Fertilizer Ingredients, 1903.

	Cents per pound.
Nitrogen:	
In ammonia salts,	17½
In nitrates,	15
In meat, dried blood and mixed fertilizers,	17
In cotton-seed meal and castor-pomace,	16½
In fine ground bone and tankage,	11
In coarse bone and tankage,	9
Phosphoric acid:	
Soluble in water, in bone fertilizers,	4½
Soluble in water, in rock fertilizers,	3
Soluble in ammonium citrate, in bone fertilizers,	4
Soluble in ammonium citrate in rock fertilizers,	2½
Insoluble in ammonium citrate, in bone fertilizers,	2
Insoluble in ammonium citrate, in rock,	1½
In fine bone, tankage and fish,	3
In coarse bone and tankage,	2½
In cotton-seed meal, castor pomace and wood ashes,	4
Potash:	
In high grade sulfate or in forms free from muriate,	5
As muriate,	4¼

Potash in excess of that equivalent to the chlorin present, will be valued as sulfate, and the remainder as muriate.

Nitrogen in mixed fertilizers will be valued as derived from the best sources of organic nitrogen, unless clear evidence to the contrary is obtained.

Phosphoric acid in mixed fertilizers is valued at bone phosphoric acid prices, unless clearly found to be derived from rock phosphate.

Bone is sifted into two grades of fineness: Fine, less than 1-50 inch in diameter; coarse, over 1-50 inch in diameter.

The result obtained by the use of this schedule does not cover the items of mixing, bagging, freight and agents' commission. To cover these, allowances are made as follows:

For freight, an allowance of $2.00 per ton on all fertilzers.

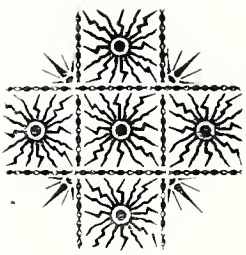
For bagging, an allowance of $1.00 per ton on all fertilzers, except when sold in original packages.

For mixing, an allowance of $1.00 per ton on complete fertilizers and rock-and-potash goods.

For agents' commission, an allowance of 20 per cent. is added to the cash values of the goods ready for shipment.

The mean quotation on freight from New York, Philadelphia and Baltimore to Harrisburg, in January, 1897, was $1.68 per ton, in lots of twelve tons or over. In May, 1899, quotations by the Pennsylvania Railroad were: From New York, $2.40; from Philadelphia, $1.70; and from Baltimore, $1.55; mean rate from the three points, $1.88.

For the present year and under similar conditions of shipment, quotations by the Pennsylvania Railroad were: From New York, $2.40; from Philadelphia, $1.90, and from Baltimore, Md., $1.75; mean rate from the three points, $2.02.



FERTILIZER ANALYSES, JANUARY 1 TO AUGUST 1, 1903.

Since January 1, 1903, there have been received from authorized sampling agents eleven hundred and twenty-six fertilzer samples, of which five hundred and forty-two were subjected to analysis, the remainder being rejected either because they represented brands analyzed last season, or because they were regarded as not certainly representative of the brand whose name they bore. When two or more samples representing the same brand were received, equal portions from the several samples were united and the composite sample was subjected to analysis.

The samples group themselves as follows, 365 complete fertilzers, furnishing phosphoric acid, potash and nitrogen; 3 dissolved bones, furnishing phosphoric acid and nitrogen; 82 rock-and-potash fertilizers, furnishing phosphoric acid and potash; 56 acidulated rock phosphates, furnishing phosphoric acid only; 27 ground bones, furnishing phosphoric acid and nitrogen; 5 miscellaneous fertilzers, which group includes potash salts, nitrate of soda and other substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phosphoric acid—total, that portion soluble in water, and of the residue, that portion not soluble in warm ammonium citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "available" phosphoric acid. (3) Potash soluble in water,—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—this element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin; this determination is made to afford a basis for estimating the proportion of the potash that is present as

chlorid or muriate, the cheaper source. The computation is made on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalen thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles, the finer being much more quickly useful to the plant.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical analysis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacturers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constituent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the ammonia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The law of 1901 abolishes this alternative and requires that the guaranty shall be given in terms of nitrogen. Many manufacturers

after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables.

A summary of the analyses made this season may be presented as follows, excepting the miscellaneous class:

Summary of Analyses Made This Season.

	Complete fertilizers.	Dissolved bone.	Rock and potash.	Dissolved rock.	Ground bone.
Number of analyses,	365	3	82	56	27
Moisture, per cent.,	9.89	6.84	11.17	9.67	6.14
Phosphoric acid:					
Total, per cent.,	10.47	17.30	11.61	15.62	22.86
Soluble, per cent.,	4.84	2.32	5.45	8.98	.....
Reverted, per cent.,	3.54	11.11	4.80	5.20	.....
Insoluble, per cent.,	2.09	3.87	1.36	1.44	.....
Potash, per cent.,	3.99	.....	2.93	.....	.....
Nitrogen, per cent.,	1.40	3.09	.....	.....	3.20
Mechanical analysis of bone:					
Fine,	.....	.....	.....	.....	70
Coarse,	.....	.....	.....	.....	30
Commercial valuation,	24.29	30.87	14.73	13.32	26.79
Average selling price,	24.57	31.17	17.20	15.13	28.67
Commercial value of samples whose selling price is ascertained,	24.15	30.87	14.74	13.34	27.25

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent., or more, were as follows:

Summary of Instances of Deficiency from Guaranty.

	Complete fertilizers.	Dissolved bone.	Rock and potash.	Dissolved rock.	Ground bone.
Deficient in four constituents,	.....	.....	.....	.....	.....
Deficient in three constituents,	13	1	2	.....	.....
Deficient in two constituents,	48	.....	5	4	.....
Deficient in one constituent,	76	.....	20	9	9
Total samples in which deficiency occurred,	137	1	27	13	9

The cases of deficiency noted during the past nine seasons in the goods as compared with their guaranties expressed in percentage of the total number of goods of each class analyzed, are as follows:

Percentage of Deficiency, 1899-1903.

	Spring, 1899.	Fall, 1899.	Spring, 1900.	Fall, 1900.	Spring, 1901.	Fall, 1901.	Spring, 1902.	Fall, 1902.	Spring, 1903.
Complete fertilzers, ...	38.4	33.7	42.0	40.8	31.6	34.6	40.0	36.7	37.5
Dissolved bone, ...	50.0	14.3	*50.0	*50.0	†	40.0	*100.0	50.0	33.3
Rock and potash, ...	19.1	34.2	29.2	33.3	31.7	26.2	30.3	43.5	32.9
Dissolved rock, ...	13.8	14.5	5.4	19.4	22.5	8.2	15.2	8.9	23.2
Ground bone, ...	18.4	25.3	36.7	11.8	34.1	18.2	17.2	25.9	33.3
All classes except miscellaneous, ...	30.9	29.2	35.2	34.3	30.8	27.6	34.2	33.2	35.1

*Only two samples analyzed.
†Only one sample analyzed.

Marked variations in the general percentages of deficiency occur from year to year. During the past season, they have been somewhat above normal. In most samples which are found below guaranty at one point, there is an excess at some other point, indicating that the cause of the departure from the composition guaranteed lay not in the failure of the manufacturer to use the requisite components, but in his failure to secure a uniform mixture. Considering all cases of complete fertilzers in which guaranties were strictly comparable with stated analytical results and sufficiently complete for the purpose: Of the 137 samples in which there was deficiency at some point, there were only 26 in which there was not distinct excess above guaranty at some other point, though sometimes such excess was not sufficient to counterbalance the deficiency. Naturally, the tendency is toward excess of the cheaper constituent, phosphoric acid, and deficiency of potash or nitrogen, as appears below.

More than two-thirds of the brands were up to or above guaranty at all points. The true average condition of the market for complete fertilizers will be more fairly exhibited by a comparison of the average composition of all samples for which guaranties are recorded with the average of the corresponding guaranties; they are as follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Fall, 1901.		
Phosphoric acid:		
Total,	11.51	9.82
Available,	10.60	8.06
Potash,	2.77	2.66
Nitrogen,	1.39	1.39
Spring, 1902.		
Phosphoric acid:		
Total,	10.80	9.29
Available,	8.25	7.82
Potash,	3.90	3.66
Nitrogen,	1.62	1.58
Fall, 1902.		
Phosphoric acid:		
Total,	12.58	11.40
Available,	9.95	9.29
Potash,	2.69	2.60
Nitrogen,	1.57	1.55
Spring, 1903.		
Phosphoric acid:		
Total,	11.90	10.67
Available,	9.36	8.73
Potash,	3.85	3.63
Nitrogen,	1 58	1.61

It is of interest to note how closely the system of valuations, based upon the wholesale prices of raw materials in the principal markets during the most important buying season and upon certain average allowances for expense and profit on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1899-1903.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1899, Spring,	$23 60	$24.70	$1.10
Fall,	22.98	23.42	.44
1900, Spring,	25.38	24.61	—.77
Fall,	23.22	23.84	.62
1901, Spring,	23.92	24.76	.84
Fall,	22.28	23.75	1.47
1902, Spring,	24.10	25.33	1.23
Fall,	21.83	23.31	1.48
1903, Spring,	24.57	24.15	—.42
Dissolved bone:			
1899, Spring,	21.75	21.81	.06
Fall,	19.00	21.12	2.12
1900, Spring,	26.00	30.87	4.87
Fall,	2 .50	22.74	—.76
1901, Spring,	28.00	29.00	1.00
Fall,	23.91	23.36	—.55
1902, Spring,	16.50	17.35	.85
Fall,	25.30	27.08	1.78
1903, Spring,	31.17	30.87	—.30
Rock and potash:			
1899, Spring,	16.83	15.16	—1.67
Fall,	17.28	14.53	—2.75
1900, Spring,	17.35	14.71	—2.64
Fall,	18.11	14.63	—3.48
1901, Spring,	16.20	14.60	—1.60
Fall,	16.09	14.23	—1.86
1902, Spring,	16.45	15.05	—1.40
Fall,	15.97	14.46	—1.51
1903, Spring,	17.20	14.74	—2.46
Dissolved rock:			
1899, Spring,	13 36	14.03	.67
Fall,	12.64	13.13	.49
1900, Spring,	13.57	13.48	—.09
Fall,	13.96	13.11	—.85
1901, Spring,	13.90	13.51	—.39
Fall,	13.18	13.82	.64
1902, Spring,	13.73	13.49	—.24
Fall,	13.54	13.70	.12
1903, Spring,	15.13	13.34	—1.79
Ground bone:			
1899, Spring,	26.67	28.11	1 44
Fall,	24.98	27.23	2.25
1900, Spring,	28.42	25.91	—2.51
Fall,	28.73	26.87	—1.86
1901, Spring,	27.59	28.71	1 12
Fall,	25.94	27.69	1.75
1902, Spring,	28.52	26.80	—1.72
Fall,	28.09	27.51	—.58
1903, Spring,	28.67	27.25	—1 42

The schedule of valuation adopted for use this year has given valuations which run below the selling prices in all grades of goods, although the agreement between the computed value and selling price in case of complete fertilizers is closer than for several seasons. The true relation can be ascertained only by taking into account the average freight to points of sale from which samples were taken this year. Rock-and-potash selling prices are always high in comparison with those of complete fertilizers and the disparity this spring is greater than for several seasons. The most striking deficiency, in view of those observed in earlier seasons, is that in dissolved rock goods.

It has been thought that a study of the relation existing between the valuations and selling prices of fertilizers offered for sale in different sections of the State might prove of interest as affording an idea of the effect of freight rates in these sections and also the effect of remoteness from manufacturing centers. For this purpose the State has been divided into sections as follows: (I) The Southeastern section, bounded on the north by and including the counties of Centre, Snyder, Dauphin, Schuylkill and Northampton, and on the west by Huntingdon and Franklin. (II) The Northeastern section, bounded on the south as above and on the west by Tioga, Lycoming and Clinton counties. (III.) The Southwestern section, bounded on the east as stated and on the north by and including Beaver, Allegheny, Indiana and Clearfield counties. (IV.) The Northwestern section, including the remaining counties of the State.

The following table shows the average valuation and selling price on all grades of goods in each of these sections:

	Selling price.	Computed commercial value.	Excess of selling price over valuation.
Section I,	$22.50	$22.28	$0.22
Section II,	22.93	21.52	1.41
Section III,	22.50	21.09	1.41
Section IV,	23.65	20.38	3.27

It appears from these figures that in a large portion of the State the agreement between the valuations and selling prices is quite close. It is to be noted, however, that in case of Section IV there is a marked difference. A perfect analysis is impossible without a careful study of freight rates to local centers, but the excess of average selling price over average valuation is probably more than increased freight rates can explain.

The analytical work has been performed by the following assistant chemists: Potash and chlorin, Mr. M. H. Pingree; insoluble and part of the soluble phosphoric acid, Mr. T. M. Carpenter, aided by Mr. H. D. Edmiston; nitrogen, Mr. H. L. Wilson; remaining soluble phosphoric acid and total phosphoric acid, Mr. W. M. Darrow; moisture, Mr. H. D. Edmiston. Mr. M. S. McDowell has had general supervision of the laboratory details, preparation of samples, and of valuation tables. Mr. T. M. Carpenter has aided in the preparation of the bulletin, while the care of the records and card computations has been in charge of Miss E. F. Jones.

COMPLETE

Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	The Abbott & Martin Rendering Co., Columbus, O.		
462	Peerless Bone and Potash,	R. T. Smith, Saltsburg,	16.05
	Allegheny City Fert. Works, Allegheny, Pa.		
241	Odorless Lawn and Garden Plant Food,	T. Baxmyer & Co., Pittsburg,	3.47
28	Potato Manure,	D. B. Dowds & Sons, Monaca,	6.58
257	Pure Potato Manure,	George McHattie, Beaver Falls,	6.43
258	Pure Raw Bone Phosphate,	George McHattie, Beaver Falls,	6.88
38	Raw Bone Phosphate,	D. B. Dowds & Sons, Monaca,	8.40
	American Reduction Co., Pittsburg, Pa.	John A. Magee, Clarion,	9.38
919	"Iron City,"		
15	†Pittsburg Guano,	C. E. McQuiston, Cyrus,	8.45
721		H. J. Phillppi, Ligonier,	
	The American Agr'l Chem. Co., New York, N. Y.		
295	Potash Mixture,	King Bros., Uniontown,	11.00
276	Potato,	J. M. Fike, Somerset,	12.28
877	Potato Grower,	J. A. Heckathorn, McCaslin,	10.38
117	Special Potash Mixture,	J. S. Culp, Indiana,	9.95
882	Special Potash Mixture,	W. McAginnis, Emlenton,	10.75
961	Star Bone Phosphate,	Fegley & Son, Pottstown,	8.98
	Bowker Branch, Boston, Mass.		
647	†Bowker's Ammoniated O. I. O. Phosphate,	J. Yonkin, Dushore,	7.58
156		J. H. Case, Riverside,	
1052		Chas. Kuntz, Friechlers,	
184	†Corn and Grain Grower,	Kernochan & Co., Titusville,	7.68
700		Loucks, Morrow & Co., Scottdale,	
905	Corn and Grain Guano,	Shott & Sigworth, Leper,	9.80

†Composite sample.

FERTILIZERS.

Potash and Nitrogen.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.18	5.35	1.59	**11.12**	10.00	**9.53**	8.00	2.44	.....	***2.44**	2.50	**.55**	.41	15.92	22.00	462
.39	6.73	8.48	**15.60**	12.00	***7.12**	11.00	.67	3.04	**3.71**	2.00	**3.21**	2.50	32.74	45.00	241
4.19	3.13	3.90	**11.22**	10.00	***7.32**	8.00	4.59	.....	***4.59**	6.00	**2.64**	2.50	23.29	28.00	28
4.75	2.32	4.79	**11.87**	10.00	***7.08**	8.00	3.94	.....	***3.94**	6.00	***2.44**	2.50	28.08	28.00	257
4.80	1.66	2.96	***9.42**	10.00	***6.46**	9.00	3.71	.....	***3.71**	4.00	**2.10**	1.50	24.93	25.00	258
3.61	3.18	3.56	**10.35**	10.00	***6.79**	9.00	3.89	.....	***3.89**	4.00	**1.55**	1.50	23.37	25.00	38
3.40	3.36	3.17	***9.93**	10.00	***6.76**	9.00	1.78	.. ..	***1.78**	2.00	***2.22**	2.47	23.64	26.00	910
4.62	2.23	1.40	***8.25**	9.00	***6.85**	8.00	1.64	.....	**1.64**	1.00	**1.55**	1.23	20.20	19.00	15
														.....	721
6.91	3.35	.87	**11.13**	.....	**10.26**	.....	6.62	.....	**6.62**	.....	**.93**	.....	26.11	29.00	295
5.32	3.07	1.22	**9.61**	.....	**8.39**	.....	4.58	.....	**4.58**	.....	**1.17**	.....	23.07	22.00	276
4.47	3.58	1.91	**9.96**	.....	**8.05**	.....	4.70	.....	**4.70**	.....	**1.53**	.....	24.76	28.00	877
6.52	3.79	1.72	**12.03**	12.00	***10.31**	11.00	7.28	.....	**7.28**	7.00	**.84**	.82	26.86	26.00	117
6.95	2.95	.76	**10.66**	.....	**9.90**	.....	7.24	.....	**7.24**	.....	**.90**	.....	26.17	28.00	882
4.44	3.95	2.44	**10.83**	.....	**8.39**	.....	3.50	.....	**3.50**	.....	**2.26**	.....	26.94	25.00	961
8.79	3.35	1.32	**13.46**	11.00	**12.14**	10.00	.22	.....	**.22**	.....	***.57**	.62	14.47	18.00	647
														15.00	156
														15.00	1052
														27.00	184
5.40	4.31	.73	**10.44**	9.00	**9.71**	8.00	4.32	.....	**4.32**	4.00	**.88**	.82	22.78	25.00	700
5.11	3.52	1.88	**10.51**	9.00	**8.63**	8.00	3.71	.....	***3.71**	4.00	**1.16**	.82	22.65	28.00	905

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
788	†Hill and Drill Phosphate,	Abram Hostetler, Scalp Level,	8.33
182		Kernochan & Co., Titusville,	
902		Shott & Sigworth, Leper,	
155	†Market Garden Fertilizer,	J. H. Case, Riverside,	4.82
452		W. J. Dougherty, Meshoppen,	
242	†Potash Bone,	B. F. McClure & Bro., Burgettstown,	8.93
178		Kernochan & Co., Titusville,	
421		B. C. Tourje, New Milford,	
609	†Potash or Staple Phosphate,	Walter Pierce, E. Smithfield,	13.08
422		B. C. Tourje, New Milford,	
656		W. Weidensaul, Hartleton,	
425	†Stockbridge Manure,	B. C. Tourje, New Milford,	11.44
1071		Wilford Scott, Mechanicsville,	
903	Stockbridge Potato Manure,	Shott & Sigworth, Leper,	8.90
786	Stockbridge Potato and Vegetable Manure,	A. Hostetler, Scalp Level,	9.13
418	†Six Per Cent. Potato Fertilizer,	G. F. Frazier, Susquehanna,	8.30
181		Kernochan & Co., Titusville,	
421		B. C. Tourje, New Milford,	
901	Sure Crop Bone Phosphate,	Shott & Sigworth, Leper,	12.18
183	Sure Crop Phosphate,	Kernochan & Co., Titusville,	9.71
	Bradley's Branch, New York.		
22	Bradley's A No. One Phosphate,	C. W. King, Emlenton,	9.08
871	Bradley's B. D. Special Guano,	T. McConnell & Son, Portersville,	12.88
269	†Bradley's Bean and Potato Phosphate,	J. F. Rhodes, Edie,	9.90
3		John Lytle, Big Bend,	
698		W. S. Hunsecker, Woodside,	
830	Bradley's B. D. Sea Fowl Guano,	S. J. Saint, Sharpsburg,	11.13
618	†Bradley's Dissolved Bone and Potash,	Daniel Hurley, Meyersburg,	10.78
21		C. W. King, Emlenton,	
23		C. W. King, Emlenton,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														.....	788
6.20	3.13	2.99	**12.32**	10.00	**9.33**	9.00	2.42	.....	**2.42**	2.00	***1.99**	2.47	26.12	32.00	182
														32.00	902
														34.00	155
5.12	2.47	1.89	**9.48**	7.00	**7.59**	6.00	9.02	.....	***9.02**	10.00	**2.86**	2.47	34.04	30.00	452
														24.00	242
5.13	2.43	.88	**8.44**	7.00	**7.56**	6.00	2.21	.....	**2.21**	2.00	**.92**	.82	18.64	23.00	178
														22.00	421
														22.00	609
5.97	3.54	1.58	**11.09**	8.00	**9.51**	8.00	3.25	.....	**3.25**	3.00	**.93**	.82	22.20	27.00	422
														20.00	656
														40.00	425
4.55	2.26	2.60	**9.41**	7.00	**6.81**	6.00	9.82	.....	***9.82**	10.00	***3.14**	3.30	35.58	38.00	1071
4.18	2.72	1.84	**8.74**	7.00	**6.90**	6.00	8.55	.....	***8.55**	10.00	***2.43**	3.30	31.14	40.00	903
5.37	2.49	.38	**8.24**	7.00	**7.86**	6.00	9.18	.....	***9.18**	10.00	***2.85**	3.30	33.70	.....	786
														26.00	418
4.74	2.58	2.43	**9.75**	7.00	**7.32**	6.00	7.01	.....	**7.01**	6.00	**.98**	.82	24.40	31.00	181
														30.00	424
6.67	3.39	1.32	**11.38**	10.00	**10.06**	9.00	2.29	.....	**2.29**	2.00	**.87**	.82	21.34	27.00	901
6.63	3.71	1.05	**11.39**	10.00	**10.34**	9.00	2.01	.....	**2.01**	2.00	**.94**	.82	21.56	25.00	183
5.55	2.76	1.61	**9.92**	.....	**8.31**	.....	1.73	.....	**1.73**	.....	**.97**	.....	19.47	20.00	22
3.22	5.29	2.67	**11.18**	9.00	**8.51**	8.00	1.78	.....	**1.78**	1.50	**2.26**	2.06	25.23	27.00	871
														20.00	269
5.51	3.26	1.68	**10.45**	9.00	**8.77**	8.00	3.99	.....	***2.99**	4.00	**.90**	.82	22.02	24.00	3
														22.25	698
6.38	3.25	2.00	**11.63**	9.00	**9.63**	8.00	2.00	.....	**2.00**	1.50	**2.10**	2.06	26.00	26.00	830
														21.00	618
5.54	3.40	1.84	**10.78**	9.00	**8.94**	8.00	2.12	.....	**2.13**	2.00	**1.21**	1.03	(21.64	24.00	21
														24.00	23

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
273	†Bradley's Niagara,	J. M. Wright, Elklick,	7.29
279		J. F. Rhodes, Edie,	
488		J. B. Miller, Wesley,	
12	Bradley's Special Potash Mixture,	John Lytle, Big Bend,	10.04
	Bradley Fert. Works, Buffalo, N. Y.		
906	Bradley's Bean and Potato Phosphate,	Shott & Sigworth, Leeper,	11.49
892	Bradley's B. D. Sea Fowl Guano,	J. H. Sheffer, Knox,	12.00
895	Bradley's Dissolved Bone and Potash,	J. H. Sheffer, Knox,	12.58
893	Bradley's Niagara Phosphate,	J. H. Sheffer, Knox,	9.83
908	Bradley's Special Potato Mixture,	Shott & Sigworth, Leeper,	10.79
859	Bradley's B. Fertilizer,	....., Enon,	8.95
	Canton Chemical Branch, Baltimore, Md.		
543	†Canton Chemical Baker's Standard H. G. Guano,	F. L. Marburger, Hamburg,	10.68
139		W. A. Leiser, Watsontown,	
739		A. D. Miller, Rockwood,	
140	†Canton Chemical Baker's Special Wheat, Corn and Grass Mixture.	W. A. Leiser, Watsontown,	11.23
123		J. H. Wingert, Lewisburg,	
291		King Bros., Uniontown,	
363	†Canton Chemical Eagle Phosphate,	Moyer & Mattern, West Point,	11.30
466		Skyles, Miller & Co., Martinsburg,	
121	†Canton Chemical Potato Manure,	J. H. Wingert, Lewisburg,	8.85
293		King Bros., Uniontown,	
68		Paxton Flour and Feed Co., Bowmansdale.	
362		Moyer & Mattern, West Point,	
468		Skyles, Miller & Co., Martinsburg,	
397	Canton Chemical Resurgam Guano,	Jones & Paxson, Hatboro,	12.23
294	†Canton Chemical C. C. C. Special Compound,	King Bros., Uniontown,	10.93
153		J. H. Case, Riverside,	
308		Jones & Paxson, Hatboro,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														18.00	273
3.77	4.24	1.69	**9.70**	8.00	**8.01**	7.00	1.37	.....	**1.37**	1.00	**.89**	.82	18.40	18.00	270
														20.00	488
6.49	3.06	1.76	**11.31**	.....	**9.55**	.....	6.89	.....	**6.89**	.....	**.84**	.....	25.70	28.00	12
6.18	3.22	1.44	**10.84**	9.00	**9.40**	8.00	4.14	.....	**4.14**	4.00	**.84**	.82	22.57	23.00	906
2.69	5.13	2.38	**11.20**	9.00	**8.82**	8.00	1.87	.....	**1.87**	1.50	**2.20**	2.06	25.33	25.00	892
6.01	3.03	1.54	**10.58**	9.00	**9.04**	8.00	2.30	.....	**2.30**	2.00	***.99**	1.03	20.93	23.00	895
5.36	2.92	1.69	**9.97**	8.00	**8.28**	7.00	1.93	.....	**1.93**	1.00	**.97**	.82	19.65	20.00	893
6.90	2.72	1.02	**10.64**	.....	**9.62**	.....	6.39	.....	**6.39**	.....	**.88**	.....	25.17	24.00	908
5.12	4.40	1.45	**10.97**	.....	**9.52**	.....	3.84	.....	**3.84**	.....	**.76**	.....	21.81	23.00	859
														24.00	543
6.50	2.04	1.66	**10.20**	9.00	**8.54**	8.00	3.06	.....	**3.06**	3.00	***1.82**	2.06	24.63	21.50	189
														25.00	739
														17.50	140
5.78	3.83	1.31	**10.92**	10.00	**9.61**	9.00	2.14	.....	**2.14**	2.00	**.91**	.82	20.80	.....	123
														22.50	291
														20.00	383
3.26	4.77	1.73	**9.76**	8.00	**8.03**	7.00	1.15	.....	**1.15**	1.00	**.90**	.82	18.16	18.00	466
														.....	121
														29.00	293
														22.00	68
2.90	3.69	1.16	**7.75**	7.00	**6.59**	6.00	5.23	.....	**5.23**	5.00	**1.28**	1.24	22.29	27.00	362
														23.00	408
3.57	4.39	1.94	**9.90**	9.00	***7.96**	8.00	4.34	.....	**4.34**	4.00	**.97**	.82	22.50	23.00	397
														22.00	294
6.37	2.41	1.57	**10.35**	9.00	**8.78**	8.00	5.12	.....	***5.12**	6.00	**2.12**	2.06	28.14	33.00	153
														30.00	398

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
477	Canton Chemical Wheat, Corn and Grass Mixture, ...	H. F. Gump, Everett, ...	7.75
	Clark's Cove Branch, New York.		
530	Clark's Cove King Phillip Alkaline Guano, ...	Solomon S. Livingood, Joanna, ...	12.65
	Crocker's Branch, Buffalo, N. Y.		
119	†Crocker's Complete Manure, ...	Harbison & Henderson, Indiana, ...	9.68
791		E. J. Hutchinson, Polk, ...	
31		J. S. Donnelson, Beaver, ...	
845		J. W. Cummings, New Wilmington,	
856		T. G. Norwoo, Mt. Jackson, ...	
967	†Crocker's General Crop, ...	Jos. Frolick, Mountville, ...	10.25
839		J. W. Mong, Knox, ...	
1002		Wm. H. Riland, Friedensburg, ...	
120	Crocker's General Crop Fertilizer, ...	Harbison & Henderson, Indiana, ...	8.19
2	†Crocker's General Crop Grower, ...	H. B. Mitchell & Co., Emlenton, ...	11.69
503		E. J. Hutchinson, Polk, ...	
846	Crocker's New Rival, ...	J. W. Cummings, New Wilmington,	10.85
792	Crocker's Potato Mixture, ...	E. J. Hutchinson, Polk, ...	11.10
966	Crocker's Potato and Tobacco Fertilizer, ...	Jos. G. Froelich, Mountville, ...	10.43
898	†Crocker's Universal Grain Grower, ...	J. W. Mong, Knox, ...	8.03
190		E. E. Borland & Bros., Rockland, ..	
968		Jos. G. Froelich, Mountville, ...	
	Detrick Branch, Baltimore, Md.		
627	Detrick's Ammoniated Bone Phosphate, ...	Lewis Barth, Dushore, ...	12.50
267	Detrick's Coon Brand, ...	E. G. Dickey, New Lexington, ...	12.18
264	†Detrick's Corn and Oats Fertilizer, ...	W. H. Heckert, Bakerstown, ...	11.93
369		Shelley & Dieterly, Telford, ...	
354	Detrick's Quickstep Bone Phosphate for Potatoes and Tobacco.	J. M. Culley, Mifflintown, ...	10.88
329	Detrick's Royal Crop Grower, ...	E. E. Taylor, Newport, ...	7.70
270	Detrick's Standard Potash Fertilizer, ...	Shelley & Dieterly, Telford, ...	12.35

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
6.06	2.94	.90	*9.90	10.00	9.00	9.00	2.43	.....	2.43	2.00	.85	.82	20.17	22.00	477
3.15	5.13	1.87	10.15	9.00	8.28	8.00	2.09	.....	2.09	2.00	*.79	1.03	19.05	22.00	530
														21.00	119
														25.00	791
5.87	2.86	1.76	10.49	9.00	8.73	8.00	3.71	.....	*3.71	4.00	.84	.82	21.60	25.00	31
														23.00	845
														20.00	856
														22.00	967
4.13	3.85	1.66	9.64	8.00	7.98	7.00	1.28	.....	1.28	1.00	1.08	.82	19.20	21.00	899
														19.00	1002
4.67	3.53	1.28	9.48	8.00	8.20	7.00	1.72	.....	1.72	1.00	.84	.82	18.67	18.00	120
														26.00	2
5.12	4.53	1.57	11.22	8.00	9.65	7.00	2.54	.....	2.54	1.00	.97	.82	21.50	22.00	502
4.94	4.71	2.21	11.86	11.00	9.65	9.00	2.18	.....	2.18	2.00	1.31	1.24	22.87	23.00	846
5.87	3.61	1.89	11.37	.....	9.48	.....	3.85	.....	3.85	.....	1.52	.....	25.14	27.00	792
5.58	2.77	1.75	10.10	9.00	8.35	8.00	3.02	.....	3.02	3.00	*1.96	2.06	24.94	28.00	966
														23.00	898
4.75	3.98	1.17	9.90	9.00	8.73	8.00	2.16	.....	2.16	2.00	.84	.82	19.59	22.00	190
														25.00	968
6.85	3.44	1.23	11.52	8.00	10.29	7.00	1.60	.....	1.60	1.00	.83	.82	20.73	20.00	627
7.64	2.29	1.17	11.10	.....	9.93	.....	3.06	.....	3.06	.....	.96	.....	22.41	19.65	267
														21.00	264
6.14	2.99	1.60	10.73	10.00	9.13	9.00	3.59	.....	3.59	3.00	.97	.82	22.24	23.00	309
7.06	1.72	.91	9.69	9.00	8.78	8.00	4.16	.....	4.16	4.00	*2.43	2.47	28.36	26.00	354
5.89	3.73	1.15	10.77	9.00	9.62	8.00	2.07	.....	2.07	2.00	*1.60	1.65	23.49	22.00	329
2.97	4.00	1.98	9.95	7.00	7.97	6.00	6.34	.....	6.34	5.00	*1.06	1.24	24.24	25.00	370

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Great Eastern Branch, Rutland, Vt.		
7	†High Grade Cabbage Grower,	R. M. McDowell, Big Bend,	10.62
305		L. D. Ramsey, Smithfield,	
304	†Great Eastern General,	L. D. Ramsey, Smithfield,	9.18
20		J. B. Atwell, Big Bend,	
450		O. A. Tiffney, Dimock,	
348	†Great Eastern Northern Corn Special,	Jas. Davidson, Wingate,	10.35
631		Jos. Yonkin, Dushore,	
349	†Great Eastern Vegetable Vine and Tobacco,	Jas. Davidson, Wingate,	4.22
630		Jos. Yonkin, Dushore,	
19	†Great Eastern English Wheat Grower,	J. B. Atwell, Big Bend,	8.45
637		Jos. Yonkin, Dushore,	
306	†Great Eastern Wheat Special,	L. D. Ramsey, Smithfield,	10.38
804		H. C. Beaty, Harrisville,	
	Lazaretto Guano Branch, Baltimore, Md.		
663	†Lazaretto Special Potato Fertilizer,	Manville & Son, Muncy,	10.75
586		Lebernight & Feree, Red Lion,	
744		G. A. Walker, Glade,	
	Maryland Branch, Baltimore, Md.		
1081	Maryland Ammoniated Bone,	S. M. Shuler & Sons, Liverpool,	11.58
973	†Maryland Special Compound for Potatoes and Tobacco.	D. S. Myers, Bareville,	9.65
665		Geo. Anderson, Muncy,	
1012		J. S. Fobst, Emaus,	
1082		S. M. Shuler & Sons, Liverpool,	
	Michigan Carbon Works Branch, Detroit, Mich.		
113	Michigan General Crop Fertilizer,	J. L. Orr, Indiana,	8.63
	Milsom's Branch, East Buffalo, N. Y.		
517	Milsom's Buffalo Guano,	Jacob Hallebach, Hamburg,	11.83
499	Milsom's Corn Fertilizer,	State Institution for Feeble-Minded, Polk.	8.13

†Composite sample.

...IZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.86	4.26	1.61	**10.73**	10.00	**9.12**	9.00	6.21	.....	***6.21**	7.00	**.96**	.82	24.74	.....	7
														24.00	305
														21.60	304
5.72	2.88	1.02	**9.62**	9.00	**8.60**	8.00	3.78	.....	***3.78**	4.00	**.90**	.82	21.37	24.00	20
														25.00	450
7.79	2.45	1.06	**11.21**	11.00	**10.15**	9.00	2.46	.....	**2.46**	2.00	**2.47**	2.47	28.06	28.00	348
														24.00	631
														28.00	349
6.40	2.65	1.28	**10.33**	9.00	**9.05**	8.00	3.48	.....	**3.48**	3.00	**2.06**	2.06	26.42	23.00	630
														22.00	19
5.37	4.21	1.27	**10.85**	9.00	**9.58**	8.00	2.39	.....	**2.39**	2.00	**.91**	.82	20.98	19.00	637
														21.00	306
4.85	3.41	2.50	**10.76**	9.00	**8.26**	8.00	2.32	.....	**2.32**	2.00	**1.80**	1.65	23.80	26.00	804
														21.00	663
4.87	3.80	.95	**9.62**	9.00	**8.67**	8.00	3.58	.....	***3.58**	4.00	**1.02**	.82	21.50	21.00	586
														.....	744
4.75	3.96	2.18	**10.89**	9.00	**8.71**	8.00	3.37	.....	**3.37**	3.00	**1.70**	1.65	24.74	22.00	1081
														28.00	973
6.59	2.25	1.10	**9.85**	9.00	**8.75**	8.00	3.60	6.33	***9.93**	10.00	**1.75**	1.65	32.54	27.59	665
														29.00	1012
														28.00	1082
4.86	3.79	1.57	**10.22**	9.00	**8.65**	8.00	4.71	.....	**4.71**	4.00	***.81**	.82	22.10	20.00	113
3.39	3.81	2.27	**9.47**	9.00	***7.20**	8.00	4.98	.....	**4.98**	4.00	**1.13**	.82	22.59	20.00	517
6.13	3.22	2.80	**12.15**	11.00	**9.35**	9.00	2.52	.....	**2.52**	2.00	***2.41**	2.47	27.81	.....	499

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
776	*Milsom's Wheat, Oats and Barley Fertilizer,	Dufton Hardware Co., Clearfield,	8.88
847		J. W. Gilland, Pulaski,	
872	Milsom's Wheat, Oats and Barley,	T. McConnell & Son, Portersville,	12.87
	Moro-Phillips Branch, Philadelphia, Pa.		
1120	Moro-Phillips Farmers' Phosphate,	Kinslow & Ewing, Newton Hamilton,	8.35
1116	Moro-Phillips Standard Guano,	J. I. Goss, Shindle,	9.93
	Pacific Guano Branch, New York, N. Y.		
481	Pacific Nobsque Guano,	J. H. Adams, Nickelville,	7.87
116	†Pacific Potato Phosphate,	J. S. Culp, Indiana,	8.05
483		J. H. Adams, Nickelville,	
	Packer's Union Branch, Rutland, Vt.		
98	Packer's Union American Wheat and Rye Grower,	D. J. Davis, Ebensburg,	9.85
740	†Packer's Union Animal Corn Fertilizer,	I. Miller, Kimel,	10.64
1112		M. P. Yoder, Belleville,	
612	Packer's Union Standard A. Fertilizer,	Seldin Tracy, E. Smithfield,	10.30
613	†Packer's Union Potato Manure,	Clayton Jerrold, E. Smithfield,	9.81
8		R. M. McDowell, Big Bend,	
1113		M. P. Yoder, Belleville,	
611	†Packer's Union Universal Fertilizer,	Seldin Tracy, E. Smithfield,	9.43
97		D. J. Davis, Ebensburg,	
636		Jos. Yonkin, Dushore,	
	Quinnipiac Branch, New York, N. Y.		
118	†Quinnipiac Climax Phosphate,	J. S. Culp, Indiana,	9.80
69		Paxton Flour & Feed Co., Bowmansdale	
1047		J. E. Buzzard, Cherryville,	
461	†Quinnipiac Mohawk Fertilzer,	H. T. Beatty, Saltsburg,	10.63
70		Paxton Flour & Feed Co., Bowmansdale,	
1056		J. E. Buzzard, Cherryville,	
	Quinnipiac Branch, Buffalo, N. Y.		
896	Quinnipiac Climax Fertilizer,	J. M. Mong, Knox,	12.04
897	Quinnipiae Mohawk,	J. M. Mong, Knox,	9.03

†Composite sample.

I IZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
5.50	3.88	1.06	**10.44**	9.00	**9.38**	8.00	2.38	.....	**2.38**	2.00	**.89**	.82	20.71	25.00	776
														.....	847
5.57	3.72	1.75	**11.04**	9.00	**9.29**	8.00	2.42	.....	**2.42**	2.00	**1.02**	.82	21.37	21.00	872
4.99	3.97	.91	**9.87**	8.00	**8.96**	7.00	1.13	.....	**1.13**	1.00	**.96**	.82	19.08	18.00	1120
4.87	4.03	.70	**9.60**	9.00	**8.90**	8.00	3.93	.....	***3.93**	4.00	**.93**	.82	21.78	21.00	1116
5.75	3.92	.70	**10.37**	9.00	**9.67**	8.00	2.06	.....	**2.06**	2.00	***.97**	1.03	20.66	24.00	481
3.91	3.42	2.30	**9.63**	7.00	**7.33**	6.00	5.53	.....	**5.53**	5.00	**1.41**	1.24	24.40	23.50	116
														26.50	483
5.31	3.39	.87	**9.57**	9.00	**8.70**	8.00	2.17	.....	**2.17**	2.00	**.91**	.82	19.66	19.00	93
7.60	2.70	.92	**11.22**	11.00	**10.30**	9.00	2.39	.....	**2.39**	2.00	***2.29**	2.47	27.46	24.00	740
														24.75	1112
511	3.01	1.07	**9.19**	.....	**8.12**	.....	1.45	.....	**1.45**	.....	**1.09**	.....	19.28	19.85	612
6.38	2.61	1.60	**10.59**	9.00	**8.99**	8.00	4.90	.....	***4.90**	6.00	***1.95**	2.06	27.54	30.00	613
														.....	8
														27.59	1113
5.77	3.35	1.28	**10.40**	9.00	**9.12**	8.00	4.13	.....	**4.13**	4.00	**.84**	.82	22.16	19.00	611
														20.00	97
														21.00	636
4.86	3.60	1.78	**10.24**	9.00	**8.46**	8.00	2.20	.....	**2.20**	2.00	***1.02**	1.03	20.29	21.50	118
														19.00	69
														21.00	1057
4.28	4.20	1.66	**10.14**	8.00	**8.48**	7.00	1.15	.....	**1.15**	1.00	**.85**	.82	18.51	20.00	461
														17.00	70
														18.00	1056
5.80	3.28	1.84	**10.92**	9.00	**9.08**	8.00	2.25	.....	**2.25**	2.00	***.99**	1.03	21.04	23.00	896
4.94	3.15	1.65	**9.74**	8.00	**8.09**	7.00	1.37	.....	**1.37**	1.00	**.93**	.82	18.82	21.00	897

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Read Branch, New York, N. Y.		
551	Read's Leader Blood and Bone,	H. A. Knauer, Douglassville,	11.10
	Reese Branch, Baltimore, Md.		
74	†Reese's Challenge Crop Grower,	J. Frank Lerew, Bermudian,	9.68
453		W. J. Dougherty, Meshoppen,	
454	†Reese's Potato Manure,	W. J. Dougherty, Meshoppen,	11.07
203		C. F. Williams, Easton,	
511		L. B. Umsted, Birdsboro,	
200	Reese's Potato Phosphate,	C. F. Williams, Easton,	12.18
	Sharpless & Carpenter Branch, Phila., Pa.		
378	†S. & C.'s Dissolved Bone Phosphate,	J. W. Craft, Ambler,	10.40
1126		Van Buskirk & Bro., Pottstown,	
221	S. & C.'s Diss. Bone Phosphate for Potatoes and General Use.	Woodman & Tomb, Langhorne,	13.08
223	S. & C.'s Farmers' Bone Phosphate,	Woodman & Tomb, Langhorne,	9.25
381	†S. & C.'s Gilt Edge Potato and Tobacco Manure,	J. W. Craft, Ambler,	7.77
220		Woodman & Tomb, Langhorne,	
529		L. A. Geiger, Joanna,	
380	†S. & C.'s No. 1 Bone Phosphate,	J. W. Craft, Ambler,	11.71
232		A. B. Shoemaker, Tullytown,	
528		L. A. Geiger, Joanna,	
525	†S. & C.'s Potato, Corn and Truck Guano,	L. A. Geiger, Joanna,	9.65
219		Woodman & Tomb, Langhorne,	
1117		J. I. Goss, Shindle,	
379	†S. & C.'s Royal Spring Mixture,	J. W. Craft, Ambler,	11.50
222		Woodman & Tomb, Langhorne,	
526		L. A. Geiger, Joanna,	
231	S. & C.'s Soluble Tampico Guano,	A. B. Shoemaker, Tullytown,	12.98
	Susquehanna Branch, Baltimore, Md.		
955	Susquehanna Crop Grower,	E. B. Wood, Avondale,	11.62

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.77	2.85	2.53	**10.15**	8.00	**7.62**	7.00	1.33	.....	**1.33**	1.00	**1.00**	.82	18.96	18.50	551
4.54	3.66	1.25	**9.45**	9.00	**8.20**	8.00	2.35	.....	**2.35**	2.00	**.84**	.82	19.29	20.00	74
														18.00	453
6.15	3.20	2.05	**11.40**	10.00	**9.35**	9.00	6.65	.....	***6.65**	7.00	**1.00**	.82	25.96	22.00	454
														24.00	203
														22.00	511
5.79	3.11	1.70	**10.60**	9.00	**8.90**	8.00	6.16	.....	**6.16**	6.00	***2.03**	2.06	29.10	26.00	200
3.82	4.13	2.00	**9.96**	9.00	***7.96**	8.00	6.21	.....	**6.21**	6.00	***1.92**	2.06	27.54	27.00	378
														30.00	1126
5.23	3.51	1.86	**10.60**	9.00	**8.74**	8.00	6.14	.....	**6.14**	6.00	**2.08**	2.06	29.17	23.00	221
2.52	5.46	2.94	**10.92**	9.00	***7.98**	8.00	4.38	.....	**4.38**	4.00	**.99**	.82	22.32	22.00	223
5.37	2.59	2.13	**10.09**	9.00	***7.96**	8.00	10.13	.....	**10.13**	10.00	**1.70**	1.65	31.00	28.00	381
														31.00	220
														28.00	529
5.00	3.50	1.60	**10.10**	9.00	**8.50**	8.00	3.17	.....	**3.17**	2.00	**1.93**	1.65	25.10	22.00	380
														24.00	232
														21.00	528
2.94	3.60	1.61	**8.15**	7.00	**6.54**	6.00	5.20	.....	**5.20**	5.00	**1.25**	1.24	22.22	22.00	525
														24.00	219
														21.00	1117
														20.00	379
4.30	4.03	1.68	**10.01**	9.00	**8.33**	8.00	2.11	.....	**2.11**	2.00	**.96**	.82	19.75	22.00	222
														19.00	526
6.25	1.59	1.87	**9.71**	9.00	***7.84**	8.00	7.54	.....	**7.54**	7.00	***3.24**	3.29	34.54	32.50	231
3.06	4.77	1.72	**9.56**	8.00	**7.83**	7.00	1.57	.....	**1.57**	1.00	**.93**	.82	18.56	20.00	955

*Constituent falls below guaranty

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
274	†Susquehanna Potato Phosphate,	D. M. Fike, Meyersville,	11.35
54		Jas. Lau & Son, Franklintown,	
688		J. N. Getz, Lock Haven,	
275	†Susquehanna XXV Phosphate,	D. M. Fike, Meyersville,	10.28
53		Jas. Lau & Son, Franklintown,	
687		J. N. Getz, Lock Haven,	
	H. E. Wheeler & Co. Branch, Rutland, Vt.		
289	†Wheeler's Corn Fertilizer,	Jerry Snyder, Casselman,	10.58
6		R. M. McDowell, Big Bend,	
410		E. N. Swartz, Moscow,	
435		F. Southworth, Halstead,	
794	Wheeler's High Grade Cabbage,	J. A. Dewoody, Springville,	10.19
689	†Wheeler's Potato Manure,	Grimmo & Storer, Cedar Springs,	9.29
411		E. N. Swartz, Moscow,	
796		J. A. Dewoody, Springville,	
821		Claysville Hardware Co., Claysville,	
489	†Wheeler's Royal Wheat Grower,	M. S. Smith, Wesley,	8.80
9		R. M. McDowell, Big Bend,	
675		S. A. Eder, Montoursville,	
	Williams & Clark Branch, New York.		
604	Williams & Clark Americus Fertilizer,	E. N. Nichols, E. Smithfield,	10.23
125	†Williams & Clark Good Grower Potato Phosphate,	Emanuel Adams, Dalmatia,	8.09
111		J. St. Clair, Indiana,	
151		F .M .Lindner, Pottsgrove,	
605	Williams & Clark High Grade Special,	E. V. Nichols, E. Smithfield,	16.05
124	†Williams & Clark Prolific Fertilizer,	Emanuel Adams, Dalmatia,	9.47
110		J. St. Clair, Indiana,	
192		C. W. Smith, Fee,	
	Tygert-Allen Branch, Philadelphia, Pa.		
216	†Allen's Popular Phosphate,	Henry Palmer, Langhorne,	9.96
643		Willis Mosier, Dushore,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														26.00	274
5.54	2.89	.83	**9.26**	9.00	**8.43**	8.00	4.99	.....	*4.99	.....	**1.66**	1.65	25.40	25.00	54
														25.00	688
														21.00	275
3.26	4.93	1.37	**9.30**	9.00	**8.13**	8.00	1.21	.....	**1.21**	1.00	**.89**	.82	18.15	20.00	53
														23.00	687
														22.00	289
														.....	6
6.10	2.87	1.54	**10.51**	9.00	**8.97**	8.00	2.53	.....	**2.53**	2.00	**1.65**	1.65	23.80	21.50	410
														22.00	435
6.14	3.56	1.75	**11.45**	.....	**9.70**	.....	7.16	.....	**7.16**	.....	**.81**	.....	25.86	26.00	794
														.....	689
														21.00	411
5.82	3.13	1.54	**10.49**	9.00	**8.95**	8.00	3.21	.....	**3.31**	3.00	**2.06**	2.06	26.17	30.00	796
														24.00	823
														24.00	489
5.50	3.78	.87	**10.15**	9.00	**9.28**	8.00	2.33	.....	**2.33**	2.00	**1.02**	.82	20.88	.....	9
														20.00	675
7.23	2.13	3.07	**12.43**	.....	**9.36**	.....	2.66	.....	**2.66**	.....	**2.53**	.....	28.87	23.00	604
														20.65	125
3.36	3.01	1.27	**7.64**	7.00	**6.37**	6.00	4.94	.....	***4.94**	5.00	***1.23**	1.24	21.88	28.00	111
														24.00	151
3.94	4.88	1.50	**10.32**	9.00	**8.82**	8.00	6.53	.39	***6.92**	7.00	***3.10**	3.30	33.81	30.00	605
														16.00	124
4.18	5.33	.15	**9.66**	8.00	**9.51**	7.00	1.20	.....	**1.20**	1.00	**.89**	.82	18.99	20.00	110
														.....	192
														23.00	216
5.68	3.21	1.71	**10.60**	9.00	**8.89**	8.00	3.02	.....	**3.02**	2.00	**1.10**	.82	21.99	18.00	64[illegible]

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
971	Allen's Special Brand Potato Manure,	D. S. Myes, Bauville,	11.40
645	†Tygert-Allen's Standard Bone Phosphate,	Willis Mosier, Dushore,	9.65
1064		S. W. Moore & Co., Moore,	
644	†Tygert-Allen's Star Potato Grower,	Willis Mosier, Dushore,	6.63
285		J. C. McMillan, Kingwood,	
975		D. S. Myes, Bauville,	
	The Armour Fertilizer Works, Chicago, Ill.		
693	†Bone, Blood and Potash,	Gilford & Raish, Wellsboro,	9.23
507		C. V. Geiger, Scarlett's Mills,	
774		Hibner & Hoover H'd'e Co., DuBois,	
826		Swartz & Bailey, Washington,	
187	†Fruit and Root Crop Special,	United H'w'e & Sup. Co., Titusville,	8.53
175		Enterprise Milling Co., Oil City,	
474		John S. Hershberger, Everett,	
818	†High Grade Potato,	Swartz & Bailey, Washington,	9.68
970		E. B. Kready, Montville,	
943	Special Mixture,	Wells & Walker, Downingtown,	7.88
	Baltimore Fertilizer Co., Baltimore Md.		
1017	Homestead for General Use,	A. K. Snyder, Alburtis,	9.90
334	†King of the Harvest for a Royal Harvest,	W. Lindsay, Reword,	10.47
1016		A. K. Snyder, Alburtis,	
578	†Old Honesty, Your Money's Worth,	Jesse L. Brodbeck, Hanover,	8.39
335		W. Lindsay, Reward,	
1019		A. K. Snyder, Alburtis,	
333	†Success for Spring and Summer Goods,	Wm. Lindsay, Reward,	7.67
579		J. L. Brodbeck, Hanover,	
	Baltimore Pulverizing Co., Baltimore, Md.		
449	Penniman's Special Guano No. 1,	J. W. Bannel, South Montrose,	7.00
767	Penniman's Tobacco Fertilizer,	W. A. Beaver, Bradley Junction,	10.35

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
5.70	2.67	1.35	**9.81**	9.00	**8.46**	8.00	6.16	.....	**6.16**	6.00	***1.87**	2.00	27.68	26.00	974
5.37	2.86	2.13	**10.36**	9.00	**8.23**	8.00	2.37	.....	**2.37**	2.00	**1.84**	1.65	23.90	20.00	645
														22.00	1064
5.05	2.54	.90	**8.49**	7.00	**7.59**	6.00	5.58	.....	**5.58**	5.00	**1.51**	1.24	24.57	20.00	644
														21.00	285
														21.00	973
														35.00	693
5.75	2.78	1.65	**10.18**	10.00	**8.53**	8.00	6.40	.....	***6.40**	7.00	**4.58**	4.11	39.39	35.00	507
														40.00	774
														40.00	820
7.21	2.94	.71	**9.96**	10.00	**9.25**	8.00	4.55	.....	***4.55**	5.00	**1.72**	1.65	26.06	28.00	187
														28.00	175
														26.00	474
6.95	2.03	.77	**9.74**	10.00	**8.97**	8.00	7.87	.74	***8.61**	10.00	**1.75**	1.65	30.28	32.00	818
														28.00	970
3.62	5.83	8.04	**17.52**	10.00	**9.48**	8.00	4.96	.....	**4.96**	1.00	**2.03**	.41	31.18	27.00	943
6.24	2.43	1.23	**9.90**	.....	**8.67**	8.00	2.31	.....	**2.31**	2.00	**1.29**	1.24	21.74	22.00	1017
8.07	2.71	1.65	**12.43**	.....	**10.78**	10.00	2.85	.....	***2.85**	3.00	**.99**	.82	23.52	19.00	334
														22.00	1016
6.77	2.22	1.32	**10.31**	.....	**8.99**	8.00	2.20	.....	**2.20**	2.00	**.48**	.41	15.37	15.50	573
														16.00	335
														18.00	1019
5.33	2.43	1.61	**9.40**	.....	**7.79**	7.00	4.89	.....	***4.89**	5.00	***.95**	1.65	22.18	20.00	333
														18.00	579
2.24	6.82	.90	**10.16**	.....	**9.26**	8.00	1.53	.....	**1.53**	1.00	***.81**	.82	18.85	20.00	449
3.42	5.89	2.35	**11.66**	.....	**9.31**	.....	1.96	.....	**1.96**	.....	**1.35**	.....	22.36	23.00	767

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
559	†Special Potato Mixture,	Gillen & Rice, Chambersburg,	9.75
772		W. A. Beaver, Bradley Junction,	
766	Royal Tomato Compound,	W. A. Beaver, Bradley Junction,	9.25
	Baugh & Sons Co., Philadelphia, Pa.		
76	Baugh's Ammoniated Soluble Alkaline,	J. W. Glatfelter, Rossville,	10.23
589	†Baugh's Animal Bone and Potash,	G. W. Holtzinger, Holtz,	11.40
750	Compound for all Crops,	A. M. McClure, Everett,	
549	†Baugh's Complete Animal Bone Fertilizer,	P. S. Shappel, Mohrsville,	10.60
383		J. W. Craft, Ambler,	
1033		Hobensack Bros., Ivyland,	
715	Baugh's Corn Fertilizer,	Eli Sell & Co., Greensburg,	10.88
548	†Baugh's Corn Fertilizer for Sugar Corn and Garden Truck.	P. S. Shappel, Mohrsville,	5.36
384		J. W. Craft, Ambler,	
571		J. W. Ruff, New Oxford,	
570	†Double Eagle,	J. W. Ruff, New Oxford,	10.13
283		M. R. Thomas, Somerfield,	
951		E. A. & J. L. Pennock, Chatham,	
751	Baugh's Double Eagle $25.00 Phosphate,	A. M. McClure, Everett,	11.28
1034		Hobensack Bros., Ivyland,	
590	†Export Bone with Potash,	G. W. Holtzinger, Holtz,	5.32
290		A. Gaddis & Co., Uniontown,	
731		P. J. Blough, Hooversville,	
377	†Baugh's General Crop Grower,	Daniel Knipe, Ft. Washington,	9.00
360		A. Gaddis & Co., Uniontown,	
382		J. W. Craft, Ambler,	
650	Baugh's High Grade Vegetable Guano,	McCullom & Aul, Espy,	11.22
408	†Baugh's Potato Fertilizer,	Burton Worth, West Chester,	10.03
77		J. W. Glatfelter, Rossville,	
732		P. J. Blough, Hooversville,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
2.34	1.26	1.45	**8.05**	.....	**6.60**	.....	4.63	.....	**4.63**	.....	**1.45**	....	22.38	22.00	559
														22.00	772
2.68	6.09	2.55	**11.32**	.....	**8.77**	.....	2.12	.....	**2.12**	.....	**1.31**	.....	21.80	19.00	766
5.34	3.33	1.11	**9.83**	.....	**8.72**	8.00	3.12	.....	**3.12**	2.00	**.92**	.50	20.82	16.50	76
5.99	2.87	2.88	**11.74**	.....	**8.86**	8.00	2.21	.....	**2.31**	2.00	**1.73**	1.65	24.50	21.00	589
														24.00	750
														23.00	549
5.58	2.17	2.46	**10.21**	.....	**7.75**	.....	5.18	.....	**5.18**	.....	**1.72**	.....	25.93	25.00	383
														24.00	1633
5.28	3.36	1.32	**10.46**	.....	**9.14**	8.00	4.34	.....	**4.34**	4.00	**.95**	.82	22.76	28.00	715
6.73	4.25	.69	**11.67**	.....	**10.98**	8.00	4.19	.....	**4.19**	4.00	**.98**	.82	24.42	19.00	548
														22.00	384
														21.00	571
														20.00	570
6.20	3.36	.66	**10.31**	.....	**9.65**	8.00	1.67	.....	**1.67**	1.00	**1.85**	1.65	23.96	22.00	283
														21.00	951
5.73	3.19	2.50	**11.42**	.....	**8.92**	8.00	1.43	.....	**1.43**	1.00	**1.92**	1.65	24.26	24.00	751
														24.00	1034
.50	3.85	9.66	**14.01**	11.00	**4.35**	.....	2.61	.....	**2.61**	2.00	**2.34**	1.65	25.51	25.00	590
														26.00	299
														28.00	731
5.08	3.08	2.54	**10.70**	.....	**8.16**	8.00	1.65	.....	**1.65**	1.00	**1.42**	.82	21.45	20.00	377
														20.00	390
														20.00	382
4.98	2.19	1.58	**8.75**	.....	**7.17**	6.00	7.71	.....	**7.71**	7.00	***3.57**	4.12	35.00	40.00	650
6.19	2.08	1.75	**10.02**	.....	**8.27**	8.00	2.26	.....	**2.26**	2.00	**1.66**	1.65	22.93	25.00	408
														22.00	77
														25.00	732

*Constituent falls below guaranty

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
652	†Baugh's Special Potato Manure,	McCullom & Aul, Espy,	8.90
385		J. W. Craft, Ambler,	
1032		Hobensack Bros., Ivyland,	
387	†Baugh's $25 Phosphate,	J. W. Craft, Ambler,	10.20
1115		G. C. Rice, Reedsville,	
	The Berg Co., Philadelphia, Pa.		
271	Special Bone Manure,	Shelley & Dieterly, Telford,	6.24
373	S. B. M. Standard Bone Manure,	Shelley & Dieterly, Telford,	8.53
1075		The Berg Co., Philadelphia,	
372	$35 Potato Manure,	Shelley & Dieterly, Telford,	6.29
1076		The Berg Co., Philadelphia,	
	Berger Bros., Easton, Pa.		
199	Potato and Truck,	Berger Bros., Easton,	11.95
	A. H. Blaker & Co., Philadelphia, Pa.		
427	Blaker's Special for Potatoes,	C. L. Knight, Newtown,	12.47
	Bradley & Green, Philadelphia, Pa.		
404	Potato Guano No. 1,	Bradley & Green Fert. Co., Phila.,	11.95
	Cambria Fertilizer Co., Johnstown, Pa.		
1 3	†Corn and Potato Manure,	H. A. Shoemaker, Ebensburg,	7.83
730		R. S. Roberts, Wilmore,	
	The Chicago Fertilizer Co., Chicago, Ill.		
463	Bone, Blood and Potash,	Geo. R. Andrews, Enon Valley,	9.45
491	Western Bone-Black and Potash,	L. B. Gillmore, Wesley,	9.88
490	Corn and Wheat Special,	L. B. Gillmore, Wesley,	9.48
	E. Frank Coe Co., New York, N. Y.		
1060	Columbian Corn Fertilizer,	Heffner & Luckenbill, Friedensburg,	10.48
1061	No. 1 Penna. Grain Special,	Heffner & Luckenbill, Friedensburg,	5.05
427	XXV Ammoniated Bone Phosphate,	W. W. Wilmarth, Hartford,	11.44
	Continental Commercial Co., Baltimore, Md.		
216	Ammoniated Bone,	Jas. Landon, E. Waterford,	7.20

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
														35.00	652
3.59	2.54	2.55	**8.68**	.....	**6.13**	5.00	10.21	.....	**10.21**	10.00	**1.78**	1.65	29.71	28.00	385
														30.00	1032
														25.00	387
5.04	3.91	2.47	**11.42**	.....	**8.95**	8.00	1.34	.....	**1.34**	1.00	**1.69**	1.65	23.10	24.00	1115
3.20	3.85	4.72	**11.77**	.....	**7.05**	7.00	3.97	.....	**3.97**	2.00	**2.10**	1.65	26 41	25.00	371
														32.00	373
5.82	3.12	4.49	**13.43**	.....	**8.94**	8.00	5.48	.....	***5.48**	6.00	***2.47**	3.30	31.47	28.00	1075
														35.00	372
4.36	3.13	4.26	**11.75**	.....	**7.49**	7.00	10.18	.....	**10.18**	10.00	**2.98**	2.47	36.81	34.00	1076
5.32	2.84	2.09	**10.25**	9.00	**8.16**	8.00	5.94	.....	***5.94**	6.00	***2.43**	2.47	29.94	27.50	199
5.05	2.96	1.96	**9.97**	9.00	**8.01**	8.00	7.92	.....	***7.92**	8.00	**1.16**	1.03	26.43	30.00	227
6.11	2.36	1.75	**10.22**	10.00	**8.47**	8.00	6.74	.....	**6.74**	6.00	***2.22**	2.50	29.95	28.00	404
														32.00	103
5.82	4.38	.38	**10.58**	.....	**10.20**	6.00	6.00	1.20	***7.20**	8.00	***1.37**	1.50	28.15	32.00	780
1.43	7.46	1.47	**10.36**	10.00	**8.89**	8.00	2.16	.....	**2.16**	2.00	**1.27**	1.23	21.12	23.00	863
3.25	5.37	2.15	**10.77**	10.00	**8.62**	8.00	2.69	.....	**2.69**	2.50	**.48**	.41	15.54	23.00	491
2.84	6.70	1.99	**11.53**	9.00	**9.54**	7.00	1.68	.....	**1.68**	1.00	***62**	.82	15.38	23.00	490
8.29	2.73	1.75	**12.77**	.....	**11.02**	8.50	.67	2 55	**3.22**	2.50	**1.24**	1.24	25.62	25.00	1000
5.27	4.68	3 03	**12.98**	.....	**9.95**	9.00	2.19	.....	**2.19**	1.00	**1.00**	.82	22.77	21.00	1001
6.02	4.47	1.62	**12.11**	.....	**10.49**	.....	2.08	.....	**2.08**	.....	**1.15**	.....	22.82	20.00	437
2.97	4.79	1.65	**9.41**	.....	**7.76**	.....	1.71	.....	**1.71**	.....	**1.18**	.....	19.63	18.00	316

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
340	Special Potato and Tomato Phos. for Vegetables Generally.	Chas. McCormick, State College, ...	11.65
314	Special Potato and Truck Phos. for Vegetables, ...	Jas. Landon, E. Waterford, ...	8.02
317	Standard Dissolved Bone Phosphate, ...	Jas. Landon, E. Waterford, ...	11.10
	Josiah Cope & Co., Lincoln University, Pa.		
451	†Ammoniathed Bone Phosphate, ...	O. A. Tiffany, Dimock, ...	11.03
160		W. F. Slagle, Bloomsburg, ...	
939		Wells & Walker, Downingtown, ...	
942	Try Me Bone Phosphate, ...	Wells & Walker, Downingtown, ...	14.52
941	Wheat and Grass Special, ...	Wells & Walker, Downingtown, ...	10.64
	Darling Co., Chicago, Ill.		
929	Chicago, ...	Thos. McCoy, Volant, ...	6.77
931	Farmers' Favorite, ...	Thos. McCoy, Volant, ...	5.90
930	Sure Winner, ...	Thos. McCoy, Volant, ...	9.01
	E. Daron, Dover, Pa.		
600	Harvest King Bone Phosphate, ...	E. Daron, Dover, ...	11.25
	James G. Downward & Co., Coatesville, Pa.		
389	Ammoniated Bone Phosphate, ...	Geo. W. Niblock, Ambler, ...	10.38
391	High Grade Special Potato Fertilizer, ...	Geo. W. Niblock, Ambler, ...	9.53
388	Royal Bone Phosphate, ...	Geo. W. Niblock, Ambler, ...	9.97
390	Special Asparagus Mixture, ...	Geo. W. Niblock, Ambler, ...	1.99
210	†Special Potato Fertilizer, ...	M. J. Pushberry, Morrisville, ...	9.78
392		Geo. W. Niblock, Ambler, ...	
	Wallace Dungan, Doylestown, Pa.		
1073	Pebel Hill Home Made Animal Bone Mixture, ...	Wallace Dungan, Doylestown, ...	3.95
	Eureka Fertilizer Co., Perryville, Md.		
25	†Corn and Potato Special, ...	J. A. Ewing, Hookstown, ...	11.63
1051			
26	Potato and Vegetable Fertilizer, ...	J. A. Ewing, Hookstown, ...	10.64

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.75	5.42	2.16	**12.33**	.....	**10.17**	.....	.97	....	**.97**	.....	**1.23**	.....	21.87	20.00	340
3.18	4.83	2.08	**10.09**	.....	**8.01**	.....	2.85	.....	**2.85**	.....	**1.27**	.....	21.50	23 00	314
7.74	3.40	2.14	**13.28**	.....	**11.14**	.....	2.10	.....	**2.10**	.....	**.62**	.....	17.40	2.00	317
														25.00	451
5.01	4.45	1.66	**11.12**	.....	**9.46**	8.00	3.32	.....	**3.32**	3.00	***.94**	1.65	22.11	19.00	160
														21.00	939
8.08	1.69	1.25	**11.02**	.....	**9.77**	10.00	5.11	.....	**5.11**	4.00	**1.68**	1.65	27 43	24.00	942
4.10	3.79	1.45	**9.34**	.....	***7.89**	8.00	1.21	.....	**1.21**	1.00	**.94**	.82	18.27	17.00	941
3.93	4.55	4.16	**12.64**	10.00	**8.48**	8.00	1.48	.69	**2.17**	2.00	**1.77**	1.65	24.49	24.00	929
4.24	3.78	7.40	**15.52**	10.00	**8.12**	8.00	2.67	1.88	**4.55**	4.00	**2.47**	2.47	31.23	25.00	931
2.81	4.62	3.27	**10.70**	10.00	***7.43**	8.00	3.19	.....	**3.19**	3.00	**1.04**	.82	21.00	25.00	930
4 58	3.60	1.11	***9.29**	10.00	**8.18**	8.00	4.95	.....	***4.95**	5.00	***1.52**	1.65	24.52	21.00	600
4.90	3.77	2.03	**10.70**	9.00	**8.67**	7.00	2.98	.....	**2.98**	2.50	***.83**	1.24	20.89	25.00	389
5.39	2.86	1.18	**9.43**	9.00	**8.25**	8.00	5.03	.....	**5.03**	4.00	***1.50**	1.65	24.81	33.00	391
3.93	3.60	1.86	**9.45**	9.00	***7.59**	8.00	2.40	.....	**2.40**	2.00	***.53**	.82	14.80	25.00	388
2.92	2 04	1.17	**6.13**	.....	**4.96**	.....	7.28	.....	**7.28**	.....	**6.03**	.....	42.25	42.00	390
5.03	3.92	.32	**9.27**	9.00	**8.95**	8.00	3.53	.....	***3.53**	4.00	***1.46**	1.65	23.29	.....	210
														28.00	392
2.57	4.54	5.68	**12.79**	12.00	***7.11**	9.00	6.07	.....	**6.07**	5.00	***3.10**	3.30	33.08	30.00	1073
6 32	3.47	2.18	**11.97**	11.00	**9.79**	9.00	1.70	.....	***1.70**	3.00	**.91**	.82	20.98	22.00	25
														.....	1051
6.23	3.30	2.35	**11.88**	9.00	**9.53**	8.00	1.58	.....	***1.58**	4.00	***1.01**	1.65	21.16	24.00	26

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	C. C. Fairlamb & Sons, Brandywine Summit, Pa.		
1041	Corn Special Phosphate,	R. C. Fairlamb & Son, Brandywine Summit.	9.20
1040	Potato Special Phosphate,	R. C. Fairlamb & Son, Brandywine Summit.	12.17
	Griffith & Boyd, Baltimore, Md.		
303	Ammoniated Soluble Bone,	A. Gaddis & Co., Uniontown,	11.23
136	†Farmers' Potato Manure,	E. A. Slagle, Snydertown,	10.25
661		John Artley, Muncy,	
706	†Fish, Bone and Potash,	H. W. Corriston & Son, Ohio Pyle,	9.63
259		G. H. Hegman, Sewickley,	
723		A. J. Steele, Latrobe,	
137	†Peerless Fertilizer,	E. A. Slagle, Snydertown,	11.42
128		Daniel Schmeltz, Pillow,	
301		A. Gaddis & Co., Uniontown,	
313		J. W. Hostetler, Walnut,	
660	†Royal Potash Cuano,	John Artley, Muncy,	12.48
815		Wm. H. Heckert, Bakerstown,	
734	Royal Potato Guano,	Levi Berkey, Somerset,	12.61
262	†Soft Ground Bone,	G. H. Hegman, Sewickley,	4.79
783		J. S Varner, Elton,	
138	†Spring Crop Grower,	S. F. Ludwig, Milton,	9.83
129		Daniel Schmeltz, Pillow,	
302		A. Gaddis & Co., Uniontown,	
355		J. W. Hostetler, Walnut,	
659	†Valley Fertillzer,	John Artley, Muncy,	10.69
360		W. H. Kauffman, Mexico,	
670		Weaver & Callahan, Montoursville,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
5.64	3.41	2.05	**11.10**	.....	**9.05**	8.00	4.26	.....	**4.26**	3.00	**2.09**	1.65	27.66	23.00	1041
5.71	2.24	1.57	**9.52**	.....	***7.95**	8.00	10.22	.....	**10.22**	10.00	***1.54**	1.65	30.19	27.00	1040
5.03	1.68	1.62	**8.33**	.....	**6.71**	.....	2.19	.....	**2.19**	.....	**.87**	.....	17.97	22.00	302
4.74	3.01	1.71	**9.46**	9.00	***7.75**	8.00	8.50	.....	***8.50**	9.00	**.85**	.85	25.38	25.00	136
														30.00	661
5.63	1.95	1.78	**9.36**	8.00	**7.58**	7.00	3.40	.....	**3.40**	3.00	***1.37**	1.50	22.20	22.00	705
														25.00	259
														26.00	723
6.63	1.91	1.41	**9.95**	9.00	**8.54**	8.00	2.26	.....	**2.26**	2.00	**.31**	.29	14.35	16.00	137
														13.50	128
														18.00	301
														15.00	313
6.58	2.41	1.66	**10.65**	9.00	**8.99**	8.00	3.45	.....	***3.45**	4.00	**.85**	.82	21.61	22.00	660
														22.00	815
6.46	2.79	1.14	**10.39**	9.00	**9.25**	8.00	3.82	.....	***3.82**	4.00	***.80**	.82	21.75	20.00	734
.36	2.06	10.70	**13.12**	11.00	**2.42**	.....	.74	.....	**.74**	.....	***2.10**	2.47	21.22	32.00	262
														.....	783
5.78	1.97	1.35	**9.10**	7.50	**7.75**	6.50	4.45	.....	***4.45**	4.50	***1.51**	1.65	23.84	22.00	138
														20.50	120
														26.00	302
														22.00	355
5.56	2.27	1.51	**9.34**	9.00	***7.83**	8.00	2.96	.....	***2.96**	3.00	**.44**	.41	15.34	18.00	659
														17.00	860
														20.00	670

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Hanover Fertilizer Co., Baltimore, Md.		
567	†Hanover Farmers' Crop Winner,	H. F. Stambaugh, Abbottstown,	9.44
471		Charles Longenacker, Waterside,	
1088		G. S. Rine, McKee's Half Falls,	
	The Hardy Packing Co., Chicago, Ill.		
921	Crop Producer,	Harrison & McCandless, Euclid,	6.33
919	Imperial,	Harrison & McCandless, Euclid,	8.97
918	Potash Fertilizer,	Harrison & McCandless, Euclid,	11.52
	S. M. Hess & Bro., Philadelphia, Pa.		
854	Keystone,	Robt. Hays, Lamentine,	10.43
93	†Potato and Truck Manure,	Jere Givler, Greason,	10.34
359		C. W. Book, Mexico,	
495	†Special Compound,	C. B. Yard, Harrisville,	9.73
61		Cornelius Murry, Franklintown,	
925		Thomas McNeese, W. Liberty,	
407	†Special Corn Manure,	Elwood Stout, Three Runs,	8.30
320		A. C. Hollenbaugh, Andersonburg,	
496		C. B. Yard, Harrisville,	
502		W. W. McClellan, Pope,	
	The Hubbard Fertilizer Co., Baltimore, Md.		
679	†Climax Bone Super Phosphate,	G. S. Updegraft, Williamsport,	10.57
1102		David Bradford Centre Hall,	
680	Royal Ensign for Early Market Vegetables.	G. S. Updegraft, Williamsport,	13.23
	M. P. Hubbard & Co., Baltimore, Md.		
57	†Farmers' Old Economy Phosphate, Best for the	E. A. Keesey, Dover,	9.52
268	Price.	P. A. Kreager, Kingwood,	
	Jarecki Commercial Co., Sandusky, O.		
172	†Fish and Potash Potato and Tobacco Food,	Clark Bros., S. Oil City,	14.72
29		J. B. Wilson & Son, Beaver	
278		E. M Knepper, Berlin,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
2.37	5.37	1.25	**8.99**	8.00	**7.74**	7.00	2.03	.....	**2.03**	1.50	**.47**	.41	13.72	16.00	567
														20.00	471
														18.00	1088
2.24	5.42	2.89	**10.55**	9.00	**7.66**	7.00	.....	1.37	**1.37**	1.00	**1.05**	.82	19.32	22.00	921
2.37	6.78	2.31	**11.46**	10.00	**9.15**	8.00	6.78	.....	***6.78**	7.00	**.88**	.82	25.18	28.00	919
4.79	3.65	3.18	**11.62**	10.00	**8.44**	8.00	4.24	.....	**4.24**	4.00	**.96**	.82	22.81	24.00	918
6.22	2.88	1.25	**10.35**	10.00	**9.10**	8.00	1.32	.....	**1.32**	1.00	**1.03**	.82	20.10	25.00	884
5.22	3.21	1.21	**9.64**	10.00	**8.43**	8.00	4.67	.....	***4.67**	6.00	**2.44**	2.40	28.46	28.00	93
														28.00	359
														29.00	495
5.27	3.39	1.47	**10.13**	10.00	**8.66**	8.00	3.85	.....	***3.85**	4.00	**.84**	.82	21.48	21.50	61
														25.00	925
														23.00	407
														22.00	320
4.31	4.09	1.65	**10.05**	10.00	**8.40**	8.00	2.21	.....	**2.21**	2.00	**.95**	.82	19.89	26.00	496
														25.00	502
2.48	5.97	1.34	**9.79**	.....	**8.45**	7.00	3.61	.....	***3.61**	4.00	**.85**	.82	20.60	20.00	679
														18.00	1102
7.74	2.29	.76	**10.79**	.....	**10.03**	8.00	4.02	.....	**4.02**	4.00	***1.67**	2.47	26.16	26.00	680
6.36	2.43	.83	**9.62**	9.50	**8.79**	8.00	2.77	.....	**2.77**	1.50	**.69**	.41	19.15	17.00	57
														16.00	268
3.93	4.60	4.35	**12.28**	10.00	***7.93**	9.00	2.93	.56	**3.49**	2.00	***.78**	1.20	21.54	.....	172
														25.00	29
														22.00	278

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
171	†Lake Erie Fish Guano,	Clark Bros., S. Oil City,	12.53
10		F. F. Witherup, Kennerdell,	
277		John Mossholder, Berlin,	
170	†Number One Fish Guano,	Clark Bros., S. Oil City,	10.65
11		F. F. Witherup, Kennerdell,	
854		W. C. Hopper, Mahoningtown,	
246	†O. K. Fertilizer,	K. Stoner, White Ash,	8.89
17		F. F. Witherup, Kennerdell,	
279		E. M. Knepper, Berlin,	
	T. S. Kenderdine & Sons, Newtown, Pa.		
224	Ammoniated Phosphate,	T. S. Kenderdine & Sons, Newtown,	12.26
225	Bone Phosphate,	T. S. Kenderdine & Sons, Newtown,	10.34
226	Potato Phosphate,	T. S .Kenderdine & Sons, Newtown,	11.22
	Lackawanna Fertilizer & Chemical Co., Moosic, Pa.		
416	†Big Yield,	R. S. Fairfield, Daleville,	7.07
393		Nelson B. Kiser, Three Runs,	
624		B. L. Kinney, Sciotaville,	
417	Bone Phosphate,	R. S. Fairfield, Daleville,	11.29
296	Bone Superphosphate,	Nelson B. Kiser, Three Tuns,	15.33
414	†Kali-Chief,	R. S. Fairfield, Daleville,	9.48
441		A. H. Rynerson, Hartford,	
426	†Our Admiral,	C. S. Page, New Milford,	7.78
347		Lewis Ackey, Wingate,	
1007		Ed. K. Spancake, Pinegrove,	
413	†Special Manure,	R. S. Fairfield, Daleville,	8.45
439		A. H. Rynierson, Hartford,	
415	†Wyoming Guano,	R. S. Fairfield, Daleville,	10.63
395		Nelson B. Kiser, Three Tuns,	
870		Geo. Marton, Princeton,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
														26.00	171
4.85	4.71	3.23	**12.79**	11.00	***9.56**	10.00	.53	1.00	***1.53**	2.00	**2.09**	.86	26.05	25.00	10
														21.00	277
														23.00	170
4.64	5.95	2.48	**13.07**	11.00	**10.59**	10.00	1.02	.....	**1.02**	1.00	**.94**	.86	21.21	23.00	11
														22.00	854
														18.00	246
3.57	2.95	2.53	**9.05**	7.00	**6.52**	6.00	.....	1.08	**1.08**	.50	**.70**	.40	16.47	16.00	17
														14.50	279
10.10	2.04	.90	**13.04**	12.00	**12.14**	11.00	2.73	.....	**2.73**	2.00	**1.46**	1.25	26.43	24.00	224
6.65	3.98	1.54	**12.17**	11.00	**10.63**	9.00	5.38	.....	**5.38**	5.00	***2.29**	2.50	31.02	30.00	225
7.81	1.72	1.21	**10.74**	9.00	**9.53**	8.00	9.11	.....	***9.11**	10.00	***1.48**	1.65	30.49	29.00	226
														26.00	416
4.85	2.57	1.06	**8.48**	.....	**7.42**	6.00	5.23	.....	**5.23**	5.00	***1.77**	2.06	25.14	33.00	393
														28.00	624
8.41	3.32	1.31	**13.04**	.....	**11.73**	10.00	2.64	.....	**2.64**	2.00	***1.62**	1.65	26.54	23.00	417
5.86	4.48	1.29	**11.63**	.....	**10.34**	10.00	2.06	.....	**2.06**	2.00	**1.86**	1.65	25.30	30.60	396
4.72	3.31	.77	**8.80**	.....	**8.03**	7.00	9.16	.....	**9.16**	8.00	***.61**	.82	24.85	26.00	414
														30.00	441
														.....	426
3.80	3.45	1.54	**8.79**	.....	**7.25**	6.00	.92	.....	***.92**	1.00	***.80**	.82	16.75	17.00	347
														23.00	1007
7.68	3.09	1.05	**11.82**	.....	**10.77**	10.00	1.73	3.58	***5.31**	6.50	***2.25**	2.47	31.39	30.00	413
														34.00	439
														22.00	415
3.89	3.45	.75	**8.09**	.....	**7.34**	7.00	3.64	.....	***3.64**	4.00	**.89**	.82	19.68	28.00	295
														28.00	870

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Lancaster Chemical Co., Lancaster, Pa.		
976	Dewey Brand for Potato and Tobacco,	M. J. Burkholder, Manheim,	9.38
977	Tobacco and Vegetable Fertilizer,	M. J. Burkholder, Manheim,	8.15
49	Wheat and Grass Fertilizer,	C. J. Bushey, Mt. Top,	13.25
	D. A. Letherbury, Chester, Pa.		
1065	Chester Brand Bone Phosphate,	D. A. Letherbury, Chester,	15.74
	Daniel Levan, Lebanon, Pa.		
1008	Lebanon Special Fertilizer,	J. R. Groh, Pine Grove,	10.40
	Lister's Agricultural Chemical Works, Newark, N. J.		
1070	Corn Fertilizer No. 2,	A. Lincoln Slotter, Mechanicsville,	9.35
572	†Corn and Potato Fertilizer,	J. N. Hersh, New Oxford,	11.64
107		Frank Douglass, Indiana,	
604		Geo. M. Spalding, Wellsboro,	
927	†G. Brand,	M. D. Maxwell, Slippery Rock,	11.28
547		O. G. Youser, Shoemakersville,	
1055		F. M. Arndt, Cherryville,	
714	Harvest Queen,	D. M. Boytz & Bro., Greensburg,	9.68
195	Lawn Fertilizer,	E. J. Gerlach, Bethlehem,	10.80
193	Special Corn Fertilizer,	E. J. Gerlach, Bethlehem,	10.92
194	†Special Crop Producer,	E. J. Gerlach, Bethlehem,	10.89
108		Frank Douglass, Indiana,	
1109		A. L. Peachy, Belleville,	
133	†Success Fertilizer,	H. M. Yordy, Stonington,	10.80
932		M. D. Maxwell, Slippery Rock,	
	Mapes Formula & Peruvian Guano Co., New York, N. Y.		
947	†Corn Manure,	Robert Dehaven, Norristown,	12.10
1058		Sangaware Bros., Cherryville,	
583	Economical Potato Manure,	A. F. Kimel, Orwigsburg,	7.43

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
5.50	3.20	2.19	**10.89**	9.00	**8.70**	8.00	4.23	.....	**4.23**	4.00	***1.09**	1.24	24.06	24.00	976
4.18	2.92	1.92	**9.02**	8.50	***7.10**	7.50	.80	6.57	**7.37**	7.00	***1.70**	2.06	28.24	30.00	977
4.68	3.75	2.39	**10.82**	9.00	**8.43**	8.00	2.12	.....	**2.12**	2.00	**.82**	.82	19.59	17.75	49
6.19	2.63	1.28	**10.10**	11.00	***8.82**	9.00	1.99	.....	***1.99**	2.00	***1.12**	1.24	20.77	28.00	1065
2.83	5.72	3.17	**11.72**	.....	**8.55**	.....	.53	1.86	**2.39**	.....	**2.05**	.....	25.62	18.00	1008
9.12	2.05	2.28	**13.45**	.....	**11.17**	10.00	.67	4.05	**4.72**	.....	**1.82**	1.65	30.16	30.00	1070
5.56	2.43	3.30	**11.59**	.....	**8.29**	.....	3.27	.....	**3.27**	.....	**1.80**	.....	25.32	25.00	572
														30.00	107
														25.00	694
														17.00	927
6.20	2.52	2.50	**11.22**	.....	**8.72**	8.00	3.07	1.05	**4.12**	4.00	**1.25**	.82	24.16	20.00	547
														24.00	1055
7.65	1.89	2.33	**11.87**	.....	**9.54**	9.00	.....	2.45	**2.45**	2.00	**1.37**	1.24	24.04	26.00	714
6.20	3.08	3.89	**13.17**	.....	**9.28**	.....	3.37	.....	**3.37**	.....	**1.71**	.....	26.25	30.00	195
5.83	2.48	4.48	**12.79**	9.00	**8.31**	8.00	3.39	.....	**3.39**	3.00	**1.68**	1.65	25.66	22.00	193
4.41	3.98	2.56	**10.95**	.....	**8.39**	8.00	1.29	.....	**1.29**	1.00	**.86**	.....	19.02	18.00	194
														20.00	108
														17.00	1109
6.37	2.85	2.61	**11.83**	.....	**9.22**	9.00	2.42	.....	**2.42**	2.00	**1.26**	1.24	22.84	20.00	133
														25.00	932
2.84	5.68	3.24	**11.76**	10.00	**8.52**	8.00	6.50	.....	**6.50**	6.00	**2.52**	2.47	31.30	34.00	947
														36.00	1058
2.96	3.51	1.33	**7.80**	6.00	**6.47**	4.00	1.29	7.18	**8.38**	8.00	**3.54**	3.29	35.95	36.00	983

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
986	Fruit and Vine Manure,	A. F. Kimel, Orwigsburg,	7.93
984	†General Crop Brand,	A. F. Kimel, Orwigsburg,	9.87
508		E. M. Zerr, Geiger's Mills,	
1067		Henry S. Beidler, Doylestown,	
946	†Potato Manure,	Robert Dehaven, Norristown,	10.75
146		Frank B. Rine, Lewisburg,	
1066		Henry S. Beidler, Doylestown,	
509	Potato Manure,	E. M. Zerr, Geiger's Mills,	8.69
985	Root and Fruit Brand,	A. K. Kimel, Orwigsburg,	9.95
1068	Top-Dresser Improved Half-Strength,	Henry S. Beidler, Doylestown,	9.30
145	Vegetable Manure or Complete Manure for Light Soils,	Frank B. Rine, Lewisburg,	8.92
990	Top Dresser Improved Half-Strength,	A. F. Kimel, Orwigsburg,	7.44
	The D. B. Martin Co., Philadelphia, Pa.		
144	Complete Dissolved Organic Compound,	John Swartzlander, Mazeppa,	10.08
521	†Complete Vegetable Manure,	Geo. E. Hepner, Shoemakersville,	10.88
238		Hobensack Bros., Ivland,	
781		Peter Shank, Salix,	
318	†Corn and Oats Special,	Jacob Segar, New Germantown,	9.63
239		Hobensack Bros., Ivyland,	
520		Geo. E. Hepner, Shoemakersville,	
522	†Dissolved Organic Compound,	Geo. E. Hepner, Shoemakersville,	10.04
131		Jos. Gass., Jr., Sunbury,	
1231		Hobensack Bros., Ivyland,	
519	†Gilt Edge Potato Manure,	Geo. E. Hepner, Shoemakersville,	11.32
246		Hobensack Bros., Ivyland,	
782		Peter Shank, Salix,	
	Nassau Fertilizer Co., New York, N. Y.		
402	†Common Sense Fertilizer,	Jones & Paxson, Hatboro,	11.46
653		S. Strickler, Rand,	
336	†Gladiator for Truck and Potatoes,	A. H. Uhlhs, Millerstown,	11.12
401		Jones & Paxson, Hatboro,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
2.33	2.21	1.94	**7.48**	7.00	**5.54**	5.00	1.73	9.32	**11.05**	10.00	**2.13**	1.65	32.67	40.00	986
														26.00	984
3.90	3.42	3.16	**10.48**	10.00	*7.32	8.00	2.55	.....	**2.55**	2.00	**1.65**	1.65	22.77	25.00	508
														26.00	1067
														29.00	946
3.52	3.61	3.58	**10.71**	8.00	**7.13**	6.00	1.47	5.75	**7.22**	6.00	**3.74**	3.71	37.04	40.00	146
														36.00	1066
3.53	4.55	2.57	**10.65**	8.00	**8.08**	6.00	1.33	6.57	**7.90**	6.00	*3.49	3.71	37.35	38.00	509
3.96	4.18	2.53	**10.67**	.....	**8.14**	.....	9.63	.....	**9.63**	.....	**.89**	.....	27.42	31.00	985
.16	1.74	2.80	**4.70**	4.00	*1.90	3.00	.67	2.24	**2.91**	2.00	*4.05	4.94	27.48	30.00	1068
2.46	2.81	3.20	**9.47**	8.00	**6.27**	6.00	1.47	5.24	**6.71**	6.00	**5.03**	4.94	40.62	42.00	145
.10	1.04	2.35	*3.49	4.00	*1.14	3.00	.53	2.20	**2.73**	2.00	*4.19	4.94	26.98	31.00	990
3.64	4.02	4.97	**12.63**	.....	*7.66	9.00	1.92	.....	*1.92	2.00	**1.07**	1.03	20.84	18.00	144
														24.00	521
4.22	4.39	4.11	**12.72**	.....	**8.69**	7 00	4.26	.....	*4.26	5.00	*2.17	2.47	28.23	27.00	238
														28.00	781
														22.25	318
4.23	4.09	4.59	**12.91**	.....	**8.32**	8.00	1.91	.....	*1.91	2.00	*1.39	1.65	22.74	24 00	239
														20.00	520
														18.00	522
3.88	4.72	4.20	**12.80**	.....	*8.60	9.00	2.22	.....	**2.22**	2.00	**1.16**	1.03	22.08	18.00	131
														21.00	1031
														29.00	519
4.32	3.74	3.16	**11.22**	.....	**8.06**	7.60	7.98	.....	*7.98	10.00	*2.29	2.47	31.70	32.00	240
														20.00	782
5.28	3.02	1.66	**9.96**	9.00	**8.30**	8.00	4.32	.....	**4.32**	4.00	*1.63	1.65	24.92	24.00	402
														30.00	653
6.17	1.80	1.15	**9.12**	8.00	**7.97**	7.00	7.19	.....	**7.19**	7.00	*3.09	3.29	33.32	30.00	336
														30.00	401

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
460	Special Potato Fertilizer,	Jones & Paxson, Hatboro,	11.55
	New Jersey Agricultural Chemical Co., Newark, N. J.		
169	Harvest Queen,	Clark Bros., S. Oil City,	15.00
	Newport Fertilizer Co., Philadelphia, Pa.		
366	All Crop Fertilizer,	Moyer & Mattern, West Point,	12.25
375	†Fish, Bone and Potash,	J. J. White, Lansdale,	13.64
50		Cook, Deardorff & Co., Dillsburg,	
636		Jno. Penny, Dry Valley Cross Roads,	
464	†Gilt Edge Potato and Tobacco Manure,	H. L. Stultz, Duncansville,	10.04
229		H. C. Morstall, Newtown,	
513		Geo. K. Linderman, Scarlett's Mills,	
166	†Grain and Grass Special,	Berwick Store Co., Berwick,	13.48
51		Cook, Deardorff & Co., Dillsburg,	
344		B. F. Miller, Madisonburg,	
374		J. J. White, Lansdale,	
343	†Potato, Tobacco and Truck Guano,	B. F. Miller, Madisonburg,	9.63
165		Berwick Store Co., Berwick,	
463		H. L. Stultz, Duncansville,	
536	†Special Compound,	Kachel & Griffith, Knauers,	14.23
230		H. C. Morstall, Newtown,	
674		G. H. Tule, Montoursville,	
168	†Top Notch Brand,	Berwick Store Co., Berwick,	11.84
52		Cook, Deardorff & Co., Dillsburg,	
512		Geo. K. Linderman, Scarlett's Mills,	
535		Kachel & Griffith, Knauers,	
	G. Ober & Sons Co., Baltimore, Md.		
75	Farmers' Mixture,	G. W. Altland, York City,	9.58
	Osceola Fertilizer Co., Osceola, Pa.		
778	Ideal Manure,	Osceola Fertilizer Co., Osceola,	6.48

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
5.83	2.26	1.53	**9.72**	9.00	**8.19**	8.00	10.28	.....	**10.28**	10.00	***1.63**	1.65	30.94	29.00	400
6.69	2.34	2.24	**11.07**	.....	**8.83**	.....	2.29	.....	**2.29**	.....	**1.37**	.....	22.62	.....	169
2.17	6.04	2.33	**10.54**	.....	**8.21**	.....	1.73	.....	**1.73**	.....	**.71**	.....	18.31	21.00	366
3.56	3.61	2.69	**9.26**	8.00	**7.17**	7.00	4.99	.....	***4.00**	5.00	**1.08**	1.64	22.29	23.00	375
														23.75	50
														24.00	696
														32.00	464
5.12	2.32	2.54	**9.98**	9.00	***7.44**	8.00	10.22	.....	**10.22**	10.00	***1.16**	1.64	28.50	30.00	229
														28.00	513
														17.50	166
3.17	4.37	2.91	**10.45**	9.00	***7.54**	8.00	2.30	.....	**2.30**	2.00	**.52**	.41	14.70	16.75	51
														18.44	344
														18.00	374
2.76	3.23	2.23	**8.22**	7.00	***5.99**	6.00	6.02	.....	**6.02**	6.00	***.70**	.82	20.53	22.69	343
														24.00	165
														25.00	463
4.13	4.23	2.71	**11.07**	11.00	***8.36**	10.00	2.55	.....	**2.55**	2.00	***.91**	1.02	20.49	20.00	536
														22.00	230
														21.12	674
7.67	1.79	3.74	**13.20**	12.00	***9.46**	11.00	.55	.....	**.55**	.25	***.58**	.62	14.16	16.50	168
														15.25	52
														16.00	512
														15.00	535
7.97	2.37	2.21	**12.55**	11.00	**10.34**	9.00	2.20	.....	**2.20**	2.00	**1.01**	.82	22.68	18.00	75
.83	3.73	3.20	**7.76**	.....	**4.56**	3.00	3.46	.....	**3.46**	3.60	**1.72**	1.65	20.86	23.00	778

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Patapsco Guano Co., Baltimore, Md.		
265	Coon,	C. B. Moore, New Lexington,	12.82
143	†Coon Brand Guano,	P. A. Baker, Vicksburg,	11.80
82		J. M. Raffensberger, York Springs,	
324		Jacob Fretz, New Bloomfield,	
149	†Corn and Tomato Fertilizer,	Geo. Walter, Montandon,	12.04
126		J. Koppenheffer, Malta,	
1084		H. F. Zaring, Liverpool,	
1086	Early Trucker Quick Growth,	H. F. Zaring, Liverpool,	9.31
357	†Sea Gull Guano,	A. S. Anderson, Reed's Gap,	5.07
148		Geo. Walter, Montandon,	
574		J. N. Hersh, New Oxford,	
585		Jonathan Geesey, Dallastown,	
1030	†Tobacco and Potato Fertilizer,	R. D. Woodring, Newside,	8.80
147		Geo. Walter, Montandon,	
1085		H. F. Zaring, Liverpool,	
	Penna. Ammonia & Fertilizer Works, Harrisburg, Pa.		
86	†Capitol Bone Superphosphate,	J. H. Urich, Mechanicsburg,	11.38
325		G. R. Burnett, New Bloomfield,	
85	†Dauphin Brand,	J. H. Urich, Mechanicsburg,	10.40
541		Geo. M. Dosch, Scarlett's Mills,	
540	Potato, Vegetable and Tobacco,	Geo. M. Dosch, Scarlett's Mills,	12.60
87	Potato, Vegetable and Truck,	E. W. Rupp, Shiremanstown,	8.75
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.		
583	Levering's Standard,	H. H. Loose, Menges's Mills,	9.92
345	Penna. Potato Producer,	Wm. Fisher, Wingate,	8.32
	Pittsburg Provision Co., Pittsburg, Pa.		
713	Corn and Potato,	W. E. Mier, Pennsville,	7.79

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
5.50	3.93	1.15	**10.58**	10.00	**9.43**	9.00	2.93	.....	***2.93**	3.00	**.87**	.82	21.16	19.00	265
4.72	5.05	1.25	**11.02**	10.00	**9.77**	9.00	3.07	.....	**3.07**	3.00	***.80**	.82	21.20	.....	143
														20.00	82
														20.00	324
6.97	2.79	1.09	***10.83**	11.00	**9.76**	9.00	2.40	.....	**2.40**	2.00	**1.33**	1.23	23.08	.....	149
														19.00	126
														20.00	1084
6.11	2.30	.83	**9.24**	8.00	**8.41**	7.00	5.26	.....	**5.26**	5.00	***3.51**	4.11	33.24	30.00	1086
														19.50	357
3.30	5.30	1.25	**9.85**	9.00	**8.60**	8.00	1.16	.....	**1.16**	1.00	**.98**	.82	18.91	.....	148
														21.00	574
														18.00	585
														23.00	1030
5.40	2.45	1.06	***8.91**	9.00	***7.85**	8.00	4.26	.....	**4.26**	4.00	**1.65**	1.64	24.15	.....	147
														22.00	1085
6.26	1.96	2.95	***11.77**	12.00	***8.22**	10.00	2.26	.....	**2.26**	2.00	**2.58**	1.24	27.34	28.00	86
														25.00	325
5.65	4.10	3.80	**13.55**	12.00	***9.75**	10.00	2.16	.....	**2.16**	2.00	**1.45**	1.24	24.38	23.00	85
														24.00	541
4.18	4.34	2.74	**11.26**	11.00	***8.52**	9.00	8.90	.....	***8.90**	10.00	***1.48**	1.65	29.59	32.00	540
5.73	3.70	1.78	**11.21**	11.00	**9.43**	9.00	.93	7.46	***8.39**	10.00	**2.07**	1.65	33.28	30.00	87
7.32	1.47	1.15	**9.94**	.....	**8.79**	8.00	3.65	.....	**3.65**	3.00	***1.53**	1.65	24.33	27.00	583
5.62	.99	.56	**7.17**	.....	***6.61**	8.00	9.66	.....	**9.66**	1.50	**1.47**	1.03	27.43	20.00	345
1.38	4.04	4.15	***9.57**	11.00	***5.42**	9.00	.....	3.51	**3.51**	3.00	**1.66**	1.64	22.68	18.00	713

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.	Moisture in 100 pounds.
309	†Corn and Potato Fertilizer,	W. N. Davis, Greensboro,	5.23
39		W. C. Gool, Monaca,	
831		J. P. McConnell, New Sheffield,	
824	†Keystone Fertilizer,	G. P. Sprauls, Claysville,	4.13
310		W. N. Davis, Greensboro,	
837		Allison & Hooper, Imperial,	
	The Pollock Fertilizer Co., Baltimore, Md.		
593	Ammoniated Bone Phosphate,	Elias Gable, Red Lion,	11.35
756	†Special Potato and Tobacco Fertilizer,	J. A. C. Rider, Tyrone,	10.75
591		Elias Gable, Red Lion,	
1122		H. M. Owens, Lewistown,	
754	†Corn and Tomato Fertilzer,	J. A. C. Rider, Tyrone,	11.69
592		Elias Gable, Red Lion,	
1119		A. A. Goss, Painterville,	
	Rasin-Monumental Co., Baltimore, Md.		
1104	Amomniated Superphosphate,	F. W. Archie, Penn. Furnace,	10.88
1103	IXL Fertilizer,	F. W. Archie, Penn. Furnace,	11.05
658	IXL Fertilzer, Rasin's Celebrated Universal Fertilizer,	W. H. Harter, Hartleton,	12.32
761	Potato Manure,	J. J. Hauk & Co., Carrolltown,	10.90
356	†Rasin's XXX,	W. A. Thomas, Mifflintown,	11.58
562		T. S. Patterson, East Berlin,	
	J. G. Reichard & Bro., Allentown, Pa.		
198	Lehigh Potato Manure,	Levin A. Lerch, Bethlehem,	9.77
	Rochester Fertilizer Works, Rochester, N. Y.		
695	Blood and Bone Guano,	F. R. & W. F. Field, Wellsboro,	8.03
1100	Blood and Bone XX,	Andrew Harter, Coburn,	8.68
	Schaal-Sheldon Fertilizer Co., Erie, Pa.		
43	Schaal's Corn and Potato,	I. W. Scott & Co., Pittshurg,	13.33
42	Sheldon's Guano,	I. W. Scott & Co., Pittsburg,	12.24

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														24.00	309
3.40	3.37	4.73	**11.50**	11.00	***6.77**	9.00	.53	1.59	***2.12**	3.00	**1.80**	1.64	23.35	24.00	39
														24.00	831
														21.00	824
3.42	3.70	4.39	**11.51**	11.00	***7.12**	9.00	2.08	.....	**.208**	1.50	**1.92**	1.64	24.01	21.00	310
														21.50	837
5.15	4.32	1.79	**11.26**	9.00	**9.47**	8.00	1.92	.....	***1.92**	2.00	**1.68**	.82	23.84	22.00	593
														22.25	756
5.21	3.54	1.06	**9.81**	9.00	**8.75**	8.00	4.02	.....	**4.02**	4.00	***1.46**	1.65	23.92	23.00	591
														24.00	1122
														22.25	754
4.86	3.84	1.68	**10.38**	9.00	**8.70**	8.00	2.17	.....	**2.17**	2.00	***.76**	.82	19.41	20.00	592
														20.00	1119
.70	5.94	2.62	***9.26**	9.50	***6.64**	8.00	.80	.....	***.80**	1.00	**1.20**	.82	17.83	18.00	1104
2.05	5.92	1.92	***9.89**	10.50	***7.97**	9.00	3.09	.....	**3.09**	3.00	**1.02**	.82	20.49	21.00	1103
2.50	5.24	2.72	**10.46**	.....	**7.74**	.....	2.86	.....	**2.86**	.....	**1.20**	.....	21.24	21.60	658
1.32	2.78	2.80	***6.90**	7.50	***4.10**	6.00	5.44	.....	**5.44**	4.00	**1.21**	.82	20.29	25.00	761
														.....	356
4.27	5.18	1.72	**11.17**	9.50	**9.45**	8.00	3.38	.....	***3.38**	5.00	***1.41**	1.64	23.98	20.00	562
6.65	2.75	1.95	**11.35**	9.00	**9.40**	8.00	9.87	10 00	**9.87**	.....	***1.17**	1.65	29.90	28.00	198
5.29	3.09	1.35	**9.73**	.....	**8.38**	8.00	2.39	.....	**2.39**	2.00	***.71**	.82	19.05	25.00	695
4.72	2.81	1.30	**8.83**	.....	***7.53**	8.00	3.49	.....	***3.49**	4.00	**.89**	.82	20.10	24.00	1100
5.91	2.86	2.19	**10.96**	9.00	**8.77**	8.00	3.71	.....	***3.71**	4.00	***2.12**	2.45	26.91	30.00	43
4.82	4.54	2.28	**11.64**	9.00	**9.36**	8.00	3.90	.....	***3.90**	4.00	**.94**	.82	22.92	25.00	42

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
44	Onion and Cabbage Fertilizer,	I. W. Scott & Co., Pittsburg,	14 31
41	Sheldon's Trucker's Manure,	I. W. Scott & Co., Pittsburg,	13.65
	The Scientific Fertilizer Co., Pittsburg, Pa.		
881	Bone, Meat and Potash,	R. J. Smith, Franklin,	7.83
253	†Corn and Gran Fertilizer,	Jas. Storer, New Sheffield,	6.97
727		J. N. Lohr, Davidsville,	
923	Corn and Grass,	McCandless Bros., Euclid,	7.68
726	†Potato Fertilizer,	J. M. Lohr, Davidsville,	4.40
254		J. Storer, New Sheffield,	
771		W. A. Beaver, Bradley Junction,	
836		A. W. Long, New Sheffield,	
	The Scott Fertilizer Co., Elkton, Md.		
531	Corn and Oats Grower,	L. A. Geiger, Joanna,	8.89
532	Lancaster Tobacco Grower,	Barton Glass, Plowville,	5.49
1015	Potato Grower,	L. W. Fritsch, Macungie,	6.65
533	Potato and Truck Special,	Barton Glass, Plowville,	7.78
	Shamokin Fertilizer Co., Shamokin, Pa.		
1092	Crade A Bone and S. H. Phosphate,	Geo. R. Hendricks, Selinsgrove,	6.13
1093	Grade D Bone and S. H. Phosphate,	Geo. R. Hendricks, Selinsgrove,	6.92
1091	High Crade Bone and S. H. Phosphate,	Geo. R. Hendricks, Selinsgrove,	6.48
1090	Pure Bone Meal with Potash,	Geo. R. Hendricks, Selinsgrove,	5.15
	M. L. Shoemaker & Co., Philadelphia, Pa.		
206	Echo Phosphate,	C. H. Hemphrey's, Morrisville,	11.32
945	Echo Superphosphate,	Nahert Dehaven, Norristown,	10.18
427	†S. S. Guano for Tomatoes, Truck and Corn,	W. H. Foote, New Milford,	10.08
208		C. H. Hemphreys, Morrisville,	
522		Kauffman C Kurtz, Geiger's Mills,	
542		Jos. Schoener, New Ringgold,	
428	Special 10 Per Cent. Potato,	W. H. Foote, New Milford,	10.45
207	†S. S. Special 10 Per Cent. Potato Fertilzer No. 2,	C. H. Hemphreys, Morrisville,	8.65
445		W. S. Squires, Glenwood,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
6.26	3.33	2.27	**11.86**	11.00	*9.59	10.00	6.43	.....	6.43	6.00	**1.03**	1.00	26.31	30.00	44
5.12	3.11	1.57	**9.80**	9.00	**8.23**	8.00	6.89	.....	*6.89	7.00	*2.55	3.29	31.14	35.00	41
4.30	2.86	5.24	**12.40**	10.00	*7.16	8.00	7.16	.....	*7.16	8.00	*2.96	3.25	33.63	.....	881
3.93	3.03	2.05	**9.01**	9.00	*6.96	8.00	2.33	.....	2.33	2.00	*1.03	1.50	19.22	19.00	253
														22.00	727
4.03	2.91	2.06	**9.00**	9.00	*6.94	8.00	2.08	.....	2.08	2.00	*1.03	1.50	18.98	20.00	923
3.84	3.86	3.11	**10.81**	10.00	*7.70	8.00	5.92	.....	*5.92	6.00	**2.53**	2.50	30.18	29.00	726
														27.50	254
														26.00	771
														27.40	836
3.10	7.21	1.90	**12.21**	9.00	**10.31**	8.00	2.16	.....	2.16	2.00	**.65**	.41	16.48	18.00	521
3.91	3.47	2.94	**10.32**	.....	**7.38**	.....	10.47	.....	**10.47**	.....	**1.82**	.....	33.22	30.00	532
3.56	3.87	2.20	**9.63**	7.00	**7.43**	6.00	8.76	.....	**8.76**	10.00	*1.60	1.65	28.50	26.50	1015
2.92	4.56	2.68	**10.16**	9.00	*7.48	8.00	6.90	.....	**6.90**	5.00	**1.73**	1.65	27.38	25.00	533
3.65	4.83	2.05	*10.53	11.61	**8.48**	9.70	3.17	.....	*3.17	3.29	*1.52	1.74	23.32	26.00	1092
3.11	5.18	1.29	*9.58	10.10	**8.29**	7.27	2.80	.....	**2.80**	2.94	*.79	1.13	19.48	21.00	1093
4.75	4.14	3.83	*12.72	13.21	*8.89	9.80	2.85	.....	**2.85**	2.95	*1.81	1.89	25.59	29.00	1091
.27	6.56	8.29	**15.12**	14.42	**6.83**	6.83	3.99	.....	*3.99	4.07	**2.80**	2.64	30.45	29.00	1090
3.49	5.21	3.92	**12.62**	9.00	**8.70**	7.00	2.36	.....	**2.36**	1.50	**1.41**	1.23	23.16	24.00	206
6.54	3.47	3.28	**13.29**	9.00	**10.01**	7.00	2.14	.....	**2.14**	1.50	**1.55**	1.23	24.90	24.00	945
5.94	3.02	3.98	**12.94**	.....	**8.96**	8.00	5.58	.....	**5.58**	5.00	**2.00**	1.65	29.50	30.00	427
														27.00	208
														23.00	523
														25.00	542
6.08	2.23	1.03	**9.34**	.....	**8.31**	6.00	10.60	.....	**10.60**	10.00	**3.34**	3.30	38.11	40.00	428
5.65	2.48	4.75	**12.88**	.....	**8.13**	8.00	10.47	.....	**10.47**	10.00	*1.73	2.06	32.98	32.00	207
														24.00	445

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
691	Special No. 2 Wheat Fertilizer,	Furst Bros., Cedar Springs,	11.38
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.		
434	Empire Lawn Fertilzer,	M. McVicker, Hopbottom,	6.93
444	Empire Phosphate,	W. G. Squires, Glenwood,	6.80
430	†Graves Potato and Tobacco Manure,	M. McVicker, Hopbottom,	8.27
603		R. E. Smith, Milan,	
157	†Special Manure for Potatoes and Vegetables,	J. H. Case, Riverside,	5.98
429		M. McVicker, Hopbottom,	
432	Vegetable and Vine Fertilizer,	M. McVicker, Hopbottom,	8.78
	Frank A. Simon, Maud P. O., Pa.		
233	The Farmers' High Grade Phosphate, Potato Grade,	F. A. Simons, Cornwells,	9.56
234	Farmers' Favorite High Grade Phosphate for Truck and Corn.	F. A. Simons, Cornwells,	7.39
	H. H. Smyser, York, Pa.		
598	Ammoniated Chicago Bone and Potash,	H. H. Smyser, York,	14.65
597	Ammoniated Chicago Bone and Tankage,	H. H. Smyser, York,	13.00
	Southern Fertilizer Co., York, Pa.		
594	Ammoniated Dissolved Bone,	Earnst & Bupp, York,	13.10
988	Dissolved Animal Bone,	A. F. Kimel, Orwigsburg,	12.50
982	Farmers' Union Fertilizer,	Amos H. Shultz, Com., Worcester,	4.29
596	†General Crop Grower,	Earnst & Bupp, York,	11.85
810		D. C. Emary, Grove City,	
197	Ox Brand Ammoniated Dissolved Bone,	Levin A. Lerch, Bethlehem,	11.42
112	†Ox Brand Farmer's Choice Brand,	J. L. Orr, Indiana,	14.83
62		Geo. B. Menear, Franklintown,	
667		M. Gillis, Hughesville,	
196	Ox Brand Special Potato Grower,	Levin A. Lerch, Bethlehem,	9.90
595	†Ox Brand Special Potato Grower,	Earnst & Bupp, York,	11.05
63		Geo. B. Menear, Franklintown,	
720		A. C. Breniser, Ligonier,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
9.00	2.71	1.24	**12.95**	.....	**11.71**	10.00	.94	.....	*.94	1.00	**.65**	.41	20.94	20.00	691
.78	3.01	1.45	*5.24	9.00	*3.79	8.00	4.72	.....	**4.72**	2.00	*1.17	1.65	18.23	35.00	434
1.59	3.15	.59	*5.33	9.00	*4.74	8.00	2.27	.....	**2.27**	2.00	*.46	1.65	13.57	21.00	444
1.84	6.41	.91	**9.16**	.....	**8.27**	.....	4.79	.....	*4.79	5.00	*.83	1.24	21.34	28.00	430
														25.00	603
1.73	3.00	5.49	**10.27**	9.00	*4.78	8.00	2.93	.....	*2.93	6.50	*1.58	3.30	21.36	33.00	157
														34.00	429
2.18	3.91	3.07	**9.16**	.....	*6.09	8.00	4.07	.....	**4.07**	4.00	*1.60	2.47	22.64	30.00	432
5.06	2.81	2.72	**10.59**	9.00	**7.87**	7.00	5.45	.....	*5.45	6.00	*1.71	3.00	26.36	30.00	233
2.90	2.62	4.59	**10.11**	8.00	*5.52	6.00	3.72	.....	**3.72**	3.50	*2.68	4.50	27.03	30.00	234
2.05	6.42	1.74	**10.21**	10.00	**8.47**	8.00	3.44	.....	*3.44	4.00	*.65	.82	19.77	21.00	598
2.52	5.22	1.73	*9.47	10.00	*7.74	8.00	2.76	.....	**2.76**	2.00	**.86**	.82	19.21	19.00	597
8.28	2.21	.83	**11.32**	11.00	**10.49**	10.00	2.38	.....	*2.38	2.50	**1.83**	1.65	25.86	25.00	594
8.81	3.35	2.27	**14.43**	.....	**12.16**	.....	.69	.....	**.69**	.....	**1.93**	.....	26.90	28.00	988
4.74	4.53	1.68	**10.95**	.....	**9.27**	.....	8.96	.....	**8.96**	.....	**1.76**	.....	30.97	.....	982
4.27	4.02	1.27	**9.56**	9.00	**8.29**	8.00	2.22	.....	**2.22**	2.00	**.81**	.41	18.93	18.00	596
														20.00	810
8.65	1.91	.89	**11.45**	11.00	**10.56**	10.00	2.41	.....	*2.41	2.50	**1.97**	1.65	26.41	23.00	197
4.98	4.04	1.00	**10.02**	10.00	**9.02**	9.00	2.10	.....	**2.10**	2.00	**.83**	.82	19.74	20.00	112
														20.00	62
														21.00	667
5.46	3.36	1.25	**10.07**	9.00	**8.82**	8.00	4.01	.....	**4.01**	4.00	**1.39**	1.24	23.90	26.00	196
5.78	2.45	1.20	**9.43**	9.00	**8.23**	8.00	4.01	.....	**4.01**	4.00	**1.33**	1.24	23.18	24.00	595
														24.00	63
														.....	720

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Swift & Co., Chicago, Ill.		
850	Complete,	Chas. Robinson, Edinburg,	5.48
841	Pure Champion Wheat and Corn Grower,	R. G. Young, New Galilee,	4.51
36	Pure Complete Fertilizer,	O. E. Aber, Industry,	7.10
839	Pure Complete Fertilizer,	R. G. Young, New Galilee,	3.88
37	†Pure Onion, Potato and Tobacco Grower,	O. E. Aber, Industry,	4.15
842		R. G. Young, New Galilee,	
35	†Pure Superphosphate,	O. E. Aber, Industry,	6.48
840		R. G. Young, New Galilee,	
	The Taylor Provision Co., Trenton, N. J.		
217	Bone, Tankage and Potash,	S. H. Longshore, Langhorne,	6.93
218	Special Potato Fertilzer,	S. H. Longshore, Langhorne,	9.38
	I. P. Thomas & Son Co., Philadelphia, Pa.		
81	†Champion Bone Phosphate,	D. S. Stitzel, York Springs,	11.69
448		E. D. Snyder, Brooklyn,	
237	Normal Bone Phosphate,	J. E. Kunkel & Co., Langhorne,	11.18
403	†Potato Fertilizer,	Samuel Haugh, Hatboro,	9.56
236		J. E. Kunkel & Co., Langhorne,	
447		E. D. Snyder, Brooklyn,	
	James Thomas, Williamsport, Pa.		
1106	Fish Bone and Potash Potato and Tobacco Manure,	L. W. Watt, Belleville,	10.53
767	†Klondyke Brand Phosphate,	John S. Wetzel, Carrolltown,	12.03
1111		L. A. Watt, Belleville,	
912	Klondyke Brand Phosphate,	McCune & Co., Sligo,	12.33
	Trenton Bone Fertilizer Co., Trenton, N. J.		
211	Corn Mixture,	L. A. Howell, Morrisville,	6.98
212	Potato Manure,	L. A. Howell, Morrisville,	12.80
1047	Special Corn Mixture,	W. S. Worthington, New Hope,	8.62
215	Special Potato Manure,	L. A. Howell, Morrlsville,	9.78
214	Superphosphate,	L. A. Howell, Morrisville,	10.13

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.13	4.48	3.12	**11.73**	11.00	**8.61**	8.00	1.32	.....	**1.32**	1.00	**1.03**	1.00	20.31	21.00	850
2.44	8.36	3.12	**13.92**	13.00	*10.80	12.00	2.28	.....	**2.28**	2.00	*1.63	1.64	25.64	25.50	841
2.65	6.59	1.11	*10.35	11.00	**9.24**	8.00	1.56	.....	**1.56**	1.00	*.52	1.00	14.29	22.00	36
4.12	3.28	2.06	*9.46	11.00	*7.40	8.00	1.16	.....	**1.16**	1.00	**1.06**	1.00	18.44	19.75	839
4.22	3.03	3.02	*10.27	11.00	*7.25	8.00	.53	6.30	*6.83	7.00	**1.77**	1.64	28.57	30.00	37
														27.00	842
3.88	4.65	2.75	*11.28	12.00	**8.53**	8.00	2.23	.....	**2.23**	2.00	*1.52	1.64	22.81	24.00	35
														22.00	840
4.99	2.85	2.64	**10.48**	.....	**7.84**	7.00	2.60	.....	**2.60**	2.50	**.88**	.82	20.13	26.00	217
5.26	2.80	4.13	**12.19**	.....	**8.06**	8.00	1.16	.....	**11.16**	10.00	*1.93	2.06	34.09	33.00	218
7.92	2.60	1.34	*11.86	12.00	**10.52**	10.00	4.43	.....	**4.43**	4.00	**1.87**	1.60	28.16	28.00	81
														25.00	448
4.60	3.22	2.40	**10.22**	9.50	*7.82	8.50	1.77	.....	**1.77**	1.50	**1.24**	1.00	20.48	24.00	237
6.54	2.34	1.01	*9.89	10.50	*8.88	9.00	6.11	.....	**6.11**	6.00	*1.59	1.60	26.97	30.00	403
														30.00	236
														28.00	447
5.24	3.36	.95	*9.55	10.00	*8.60	9.00	5.00	.....	**5.00**	3.00	**1.61**	.82	25.38	30.00	1106
4.48	5.30	1.09	*10.87	14.00	**9.78**	9.00	3.09	.....	**3.09**	2.50	*.79	2.06	21.26	24.00	764
														23.50	1111
4.93	4.74	1.07	**10.74**	10.00	**9.67**	9.00	3.03	.....	**3.03**	3.00	**.84**	.82	21.39	24.00	912
3.57	2.67	2.05	**8.29**	.....	*6.24	8.00	4.87	.....	*4.87	10.00	*2.05	3.30	25.12	27.00	211
4.35	4.48	2.10	**10.93**	.....	*8.83	9.00	7.50	.....	**7.50**	2.00	**1.55**	.82	28.41	25.00	212
2.83	5.15	3.03	**11.01**	.....	*7.98	8.00	3.39	.....	*3.39	10.00	*1.56	3.30	23.66	27.00	1047
4.71	3.25	2.48	**10.44**	.....	*7.96	8.00	9.98	.....	**9.98**	7.00	**3.13**	1.65	36.85	32.00	215
6.60	3.32	2.02	**11.94**	.....	**9.92**	.....	3.38	.....	**3.38**	.....	**2.47**	.....	29.17	27.00	214

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
213	$32.00 Potato Manure,	L. A. Howell, Morrisville,	9.40
1048	XX Brand Fertilizer,	W. S. Worthington, New Hope,	12.90
	F. W. Tunnell & Co., Philadelphia, Pa.		
376	Ammoniated Bone Phosphate with Potash,	J. G. Hackman, Lansdale,	12.60
364	High Grade Truck and Potato Grower,	Moyer & Mattern, West Point,	12.88
1043	High Grade Truck and Potato Manure,	J. A. Morrow, Newtown Square,	10.90
1044	IXL Guano,	J. A. Morrow, Newtown Square,	12.43
365	†Universal Grower,	Moyer & Mattern, West Point,	11.58
1045		J. A. Morrow, Newtown Square,	
	I. J. Tustin, Phoenixville, Pa.		
958	Pickering Valley Special for Potatoes,	I. J. Tustin, Phoenixville,	11.63
	Tuscarora Fertilizer Co., Baltimore, Md.		
472	†Standard Phosphate,	D. S. Broombaugh, New Enterprise,	9.58
569		J. C. Birely, New Oxford,	
	The J. E. Tygert Co., Philadelphia, Pa.		
1059	Early Truck Grower,	W. O. Minich, Cherryville,	14.18
209	Fish, Bone and Potash,	W. H. Lacy, Morrisville,	4.44
1026	†Gold Edge Potato Guano,	Oswald B. Peter, Bests,	9.88
1061		W. O. Minich, Cherryville,	
1027	†Golden Harvest Phosphate,	Oswald B. Peter, Bests,	11.46
1062		W. O. Minich, Cherryville,	
1024	Popular Phosphate,	Oswald B. Peter, Bests,	10.71
1025	Potato Fertilzer,	Oswald B. Peter, Bests,	10.00
	Walker, Stratman & Co., Allegheny, Pa.		
807	Big Bonaza,	I. J. Pizer & Sons, Grove City,	7.59
809	Grain King,	I. J. Pizer & Sons, Grove City,	8.73
823	†Potato Special,	Claysville Hardware Co., Claysville,	6.85
808		I. J. Pizer & Sons, Grove City,	
835		S. V. Todd, New Sheffield,	
890		E. H. Curtis, Emlenton,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
5.34	2.62	2.23	**10.19**	.....	*7.96	8.00	10.70	.....	**10.70**	10.00	*2.41	2.47	34.47	30.00	213
3.56	5.18	2.43	**11.17**	.....	**8.74**	7.00	2.53	.....	*2.53	3.00	*1.11	1.65	21.48	23.00	1048
5.16	4.36	1.66	**11.18**	9.00	**9.52**	8.00	3.75	.....	*3.75	4.00	.98	.82	22.89	24.00	376
2.90	4.15	1.50	**8.55**	.....	**7.05**	6.00	6.49	.....	**6.49**	6.00	*1.60	1.65	25.40	28.00	364
2.51	4.68	1.48	**8.67**	.....	**7.19**	6.00	6.29	.....	**6.29**	6.00	*1.52	1.65	24.86	26.00	1043
4.76	4.95	1.69	**11.40**	9.00	**9.71**	8.00	2.73	.....	**2.73**	2.00	*1.56	1.65	24.24	25.00	1044
3.04	4.91	1.74	**9.69**	8.00	**7.95**	7.00	1.33	.....	**1.33**	1.00	**1.09**	.82	19.11	22.00	365
														20.00	1045
3.37	3.24	2.30	**8.91**	.....	**6.61**	6.00	5.46	.....	**5.46**	5.00	**1.26**	1.24	22.90	27.00	958
5.84	4.21	.90	**10.95**	10.00	**10.05**	8.00	1.93	.....	*1.93	2.00	*1.23	1.64	22.28	22.00	472
														19.00	569
5.02	1.91	.71	**7.64**	7.00	**6.93**	6.00	2.35	.....	**2.35**	2.00	*2.94	3.31	26.46	32.00	1059
3.96	2.01	1.38	**7.35**	.....	**5.97**	.....	1.84	.....	**1.84**	.....	**2.76**	.....	24.37	29.00	209
5.47	1.69	1.18	**8.34**	8.00	**7.16**	7.00	5.12	.....	**5.12**	5.00	*1.27	1.65	23.11	27.00	1026
														28.00	1061
5.46	1.51	1.92	*8.89	11.00	*6.97	8.00	2.50	.....	**2.50**	2.00	.67	.40	17.88	19.00	1027
														20.00	1062
5.11	2.45	1.15	**8.71**	8.00	**7.56**	7.00	1.50	.....	**1.50**	1.00	**.92**	.82	18.02	20.00	1024
5.41	2.39	1.29	**9.09**	.....	**7.80**	.....	3.64	.....	**3.64**	.....	**1.07**	.....	21.16	25.00	1025
4.22	2.59	3.13	*9.94	10.00	*6.81	9.00	3.75	.....	*3.75	4.00	**1.62**	1.50	23.30	24.00	807
4.41	2.70	2.51	*9.62	10.00	*7.11	9.00	1.71	.....	*1.71	4.00	**1.02**	.82	18.76	23.00	809
														28.00	823
														28.00	808
3.99	2.68	4.05	**10.72**	10.00	*6.67	8.00	5.64	.....	*5.64	6.00	*2.45	2.50	28.96	29.00	835
														30.00	890

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	F. K. Walt & Co., Supplee P. O., Pa.		
367	Farmers' Union,	W. K. Hebner, West Point,	10.98
	John Whann & Sons, Philadelphia, Pa.		
399	Reliable Ammoniated Superphosphate,	Jones & Paxon, Hatboro,	13.68
	The R. A. Wooldridge Co., Baltimore, Md.		
341	Champion Giant Phosphate,	Emmanuel White, Farmers' Mills,	9.31
59	†Triumph Pure Bone Phosphate,	C. M. Wolf, York Springs,	10.28
1123		S. A. McClintock, Siglerville,	
	York Chemical Works, York, Pa.		
80	†Dempwolf's Half-and-Half Fertilizer,	N. H. Spangler, Rossville,	11.90
322		S. A. Dunn, Landisburg,	
89	†Dempwolf's Plow Brand,	W. H. Zearing, Shiremanstown,	11.72
323		S. A. Dunn, Landisburg,	
962	†Potato and Truck Special Fertilizer,	C. A. Herr, Columbia,	13.05
90		W. H. Zearing, Shiremanstown,	
997		D. B. Staler, Cressona,	
964	Special Tobacco Fertilizer,	C. A. Herr, Columbia,	9.34
	Henry S. Zook, Elverson, Pa.		
534	†No. 5 Pride of Chester Corn and Oats and Wheat Phosphate.	H. S. Zook, Elverson,	11.62
539		H. S. Zook, Elverson,	

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.06	4.39	1.46	**9.91**	.....	**8.45**	.....	5.39	.....	**5.39**	.....	**.92**	.....	22.88	20.00	367
7.61	1.76	.91	**10.28**	.....	**9.37**	8.00	1.97	.....	***1.97**	2.00	***1.27**	1.65	21.87	25.00	399
4.89	4.87	.86	**10.62**	.....	**9.76**	9.00	2.09	.....	**2.09**	2.00	**.84**	.82	20.37	20.00	341
5.21	3.26	1.12	**9.59**	.....	**8.47**	8.00	4.17	.....	**4.17**	4.00	**1.29**	1.24	23.23	23.00	59
														24.00	1123
1.60	4.99	1.41	**8.00**	8.00	***6.59**	7.00	.85	.....	***.85**	1.00	***.57**	.82	14.71	16.50	80
														18.00	322
3.21	4.73	1.92	**10.06**	.....	**8.14**	.....	2.16	.....	**2.16**	.....	**1.18**	.....	20.61	22.00	89
														21.00	323
4.35	2.96	1.58	***8.89**	10.00	***7.31**	8.00	7.20	.....	**7.20**	7.00	***2.15**	2.47	28.82	30.00	962
														32.00	90
														30.00	997
4.89	1.81	1.71	**8.41**	8.00	***6.70**	7.00	.67	8.69	***9.36**	10.00	***2.93**	3.30	35.37	34.00	964
4.64	5.47	1.14	**11.25**	11.00	**10.11**	10.00	2.33	.....	**2.33**	2.00	**.92**	.41	21.28	18.00	534
														18.00	539

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The Allentown Mfg. Co., Allentown, Pa.	
204	Phosphate and Potash,	E. J. Unaugest, Nazareth,
	The American Agri. Chem. Co., New York, N. Y.	
134	†Big Crop Phosphate,	Gausar Bros., Snydertown,
104		A. F. Stutzman, Johnstown,
142		W. A. Leiser, Watsontown,
876	Bone Potash,	J. A. Heckathorn, McCorlin,
467	Gem Alkaline Bone,	Skyles, Miller & Co., Martinsburg,
883	High Grade Dissolved Bone and Potash,	W. McAgumis, Emlenton,
	Bowker Branch, Boston, Mass.	
244	Dissolved Bone Phosphate with Potash,	B. F. McClure & Bro., Burgettstown,
621	†Empire State Bone and Potash,	Phil Taylor, Rome,
1		Jas. Bennett, Emlenton,
887		G. H. Kline, Lamentine,
	Bradley Branch, New York, N. Y.	
271	†Bradley's Alkaline Bone with Potash,	J. F. Rhodes, Edie,
5		John Lytle, Big Bend,
272		J. F. Rhodes, Edie,
620	Bradley's Bone with Potash,	Daniel Hurley, Meyersburg,
619	Bradley's High Grade Bone with Potash,	Daniel Hurley, Meyersburg,
	Canton Chemical Branch, Baltimore, Md.	
141	†Canton Chemical Soluble Bone and Potash,	W. A. Leiser, Watsontown,
122		J. H. Wingert, Lewisburg,
292		King Bros., Uniontown,
	Detrick's Branch, Baltimore, Md.	
736	Detrick's Soluble Bone Phosphate,	Levi Berkey, Somerset,
353	†Detrick's Soluble Bone Phosphate and Potash,	Jas. McCully, Mifflintown,
626		Lewis Barth, Dushore,

†Composite sample.

FERTILIZERS.

Acid and Potash.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
8.78	9.03	4.52	.43	**13.98**	14.00	**13.55**	13.00	1.68	.....	***1.68**	2.00	15.52	18.00	204
													.....	134
10.88	5.19	3.21	1.00	**9.40**	9.00	**8.40**	8.00	4.86	.....	***4.86**	5.00	15.27	13.00	104
													14.70	142
12 73	3.96	6.64	1.91	**12.51**	.....	**10.60**	.....	1.88	.....	**1.88**	.....	13.87	20.00	876
9.09	2.76	4.29	.43	**7.48**	7.00	**7.05**	6.00	3.13	.....	**3.13**	3.00	12.34	15.00	467
14.47	8.49	3.87	.97	**13.33**	.....	**12.36**	.....	5.14	.....	**5.14**	.....	18.46	24.00	883
12.20	1.29	8.23	3.71	**13.23**	.....	**9.52**	.....	1.11	.....	**1.11**	.....	12.75	20.00	244
													17.00	621
9.63	4.17	4.00	1.41	**9.58**	9.00	**8.17**	8.00	3.31	.....	**3.31**	3.00	13.70	20.00	1
													22.00	887
													15.00	271
11.33	6.38	3.87	1.10	**11.35**	11.00	**10.25**	10.00	2.00	.....	**2.00**	2.00	13.76	20.00	5
													16.00	272
10.94	6.60	3.40	2.68	**12.68**	11.00	**10.00**	10.00	2.25	.....	**2.25**	2.00	14.46	16.00	620
8.87	8.34	4.10	.81	**13.25**	.....	**12.44**	.....	.93	3.43	**4.36**	.....	18.22	19.00	619
													13.35	141
10.80	3.20	6.89	1.21	**11.30**	11.00	**10.09**	10.00	2.06	.....	**2.06**	2.00	13.36	.....	122
													18.00	292
11.92	5.85	4.55	.87	**11.27**	11.00	**10.40**	10.00	2.00	.....	**2.00**	2.00	13.70	14.50	736
13 40	6.16	4.78	.64	**11.58**	11.00	**10.94**	10.00	2.24	.....	**2.24**	2.00	14.65	15.00	353
													18.00	626

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Great Eastern Branch, Rutland, Vt.	
32	†Great Eastern Soluble Bone and Potash,	Hunter & McFarland, Beaver,
18		J. B. Atweil, Big Bend,
350		J. Davidson, Wingate,
628		Jos. Yonkon, Dushore,
	Lazaretto Branch, Baltimore, Md.	
588	Gem Alkaline Phosphate,	Lebernight & Ferree, Red Lion,
575	†Lazaretto Dissolved Bone and Potash,	Z. H. Cashman, New Oxford,
664		Manville & Son, Muncy,
576	†Lazaretto H. G. Dissolved Bone and Potash,	Z. H. Cashman, New Oxford,
105		A. F. Stutzman, Johnstown,
666		Manville & Son, Muncy,
	Maryland Branch, Baltimore, Md.	
1080	Maryland Bone Superphosphate,	S. M. Shuler & Sons, Liverpool,
	Michigan Carbon Works Branch, Detroit, Mich.	
114	Michigan Red Line Phosphate with Potash,	J. L. Orr, Indiana,
	Milsom Branch, East Buffalo, N. Y.	
518	†Milsom's Dissolved Bone and Potash,	Jacob Hollenbach, Hamburg,
24		C. W. King, Emlenton,
828		Allison & Hooper, Imperial,
	Moro-Philips Branch, Philadelphia, Pa.	
553	Moro-Philips Alkaline Bone Phosphate,	Geo. H. Stewart, Shippensburg,
	Packer's Union Branch, Rutland, Vt.	
480	†Packer's Union Banner Wheat Grower,	H. F. Gump, Everett,
99		D. J. Davis, Ebensburg,
633		Jos. Yonkon, Dushore,
	Quinnipiac Branch, New York, N. Y.	
72	Quinnipiac Big Crop Phosphate,	Paxton F. & F. Co., Bowmansdale,
71	Quinnipiac Dissolved Bone and Potash,	Paxton F. & F. Co., Bowmansdale,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
9.23	4.89	5.21	1.58	**11.68**	11.00	**10.10**	10.00	2.02	.....	**2.02**	2.00	13.66	18.00	32
													19.00	18
													17.00	350
													15.00	628
9.83	2.78	4.69	.28	**7.75**	.....	**7.47**	.....	3.30	.....	**3.30**	.....	12.70	13.00	588
12.50	4.32	6.06	.90	**11.28**	11.00	**10.38**	10 00	1.94	.....	***1.94**	2.00	13.48	14.00	575
													16.00	664
													17.00	576
12.20	7.63	4.61	.40	***12.64**	13.00	**12.24**	12.00	4.84	.....	***4.84**	5.00	17.76	19.00	105
													19.00	666
11.95	6.81	4.33	.64	**11.78**	11.00	**11.14**	10.00	2.03	.....	**2.03**	2.00	14.24	14.50	1080
11.10	5.72	5.01	1.26	**11.99**	11.00	**10.73**	10.00	1.92	.....	***1.92**	2.00	13.94	15.00	114
11.55	6.51	3.06	.83	***10.40**	11.00	***9.57**	10.00	2.24	.....	**2.24**	2.00	13.52	14.00	518
													24.00	24
													15.50	838
11.99	7.46	3.79	.97	**12.22**	11.00	**11.25**	10.00	2.15	.....	**2.15**	2.00	14.59	14.00	553
11.32	7.23	3.46	1.14	**11.83**	11.00	**10.69**	10.00	2.10	.....	**2.10**	2.00	14.26	15.00	480
													15.00	99
													15.00	633
12.35	6.20	3.26	.52	**9.98**	.....	**9.46**	.....	4.08	.....	**4.08**	.....	15.21	15.50	72
12.40	1.92	7.63	1.35	***10.90**	11.00	***9.55**	10.00	2.05	.....	**2.05**	2.00	12.94	14.50	71

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
73	Quinnipiac Gem Alkaline Phosphate,	Paxton F. & F. Co., Bowmansdale,
	Reese Branch, Baltimore, Md.	
201	†Reese's High Grade Potash Mixture,	C. F. Williams, Easton,
1010		H. Kieffer, Pinegrove,
1046	Reese's Wheat Special,	Isaac Holcomb, New Hope,
	Susquehanna Branch, Baltimore, Md.	
784	†Susquehanna Alkaline Bone Phosphate,	Conrad Nees, Geistown,
56		Jas. Lau & Son, Franklintown,
979		Horace Reigner, Pittston,
686	†Susquehanna High Grade Bone and Potash,	J. N. Getz, Lock Haven,
55		Jas. Lau & Son, Franklintown,
1004		John H. Reed, Friedensburg,
	Tygert-Allen Branch, Philadelphia, Pa.	
550	†Allen's Alkaline Bone Phosphate,	D. G. Gross, Monocacy,
642		Willis Mosier, Dushore,
	Zell's Branch, Baltimore, Md.	
584	Zell's Big Crop Phosphate,	A. A. Erhert, York,
84	Zell's Dissolved Bone Phosphate and Potash Guano,	O. F. Arnold, Clear Spring,
	Armour Fertilizer Works, Chicago, Ill.	
999	†Phosphate and Potash No. 2,	Heffner & Luckenbill, Friedensburg,
469		J. E. Hagey, Henrietta,
1021		Henry Sitler, Trexlertown,
1105		Blair Kauffman, Williamsburg,
	Baltimore Fertilizer Co., Baltimore, Md.	
577	†Soluble Bone and Potash,	Jesse L. Brodbeck, Hanover,
332		William Lindsay, Reward,
1018		A. K. Snyder, Alburtis,
	Baltimore Pulverizing Co., Baltimore, Md.	
768	†Special Spring Mixture,	W. A. Beaver, Bradley Junction,
558		Gillard & Rice, Chambersburg,
832		J. A. Allison, Hookstown,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as murlate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
4.69	3.13	3.97	.43	**7.53**	.....	**7.10**	.....	3.08	.....	**3.08**	.....	12.38	13.00	73
12.45	8.53	2.40	1.45	*12.38	13.00	*10.93	12.00	5.30	.....	**5.30**	5.00	17.94	18.75	201
													18.50	1010
9.34	5.73	4.83	1.12	**11.68**	11.00	**10.56**	10.00	1.82	.....	***1.82**	2.00	13.69	17.50	1046
11.15	6.50	4.17	.90	**11.57**	11.00	**10.67**	10.00	2.09	.....	**2.09**	2.00	14.05	18.00	784
													16.00	56
													16.00	979
													18.00	686
12.01	8.00	3.97	1.06	**13.03**	13.00	*11.97	12.00	5.17	.....	**5.17**	5.00	18.20	20.00	55
													17.50	1004
6.99	5.56	5.32	1.51	**12.39**	11.00	**10.88**	10.00	2.63	.....	**2.63**	2.00	14.85	16.00	550
													14.00	642
7.44	5.49	3.81	.30	**9.60**	.....	**9.30**	.....	4.76	.....	**4.76**	.....	15.60	15.50	584
12.20	5.32	5.42	.88	*11.62	12.00	*10.74	11.00	2.11	.....	**2.11**	2.00	13.93	15.50	84
8.85	6.20	2.00	.61	***8.81**	10.00	**8.20**	8.00	4.86	.....	***4.86**	5.00	15.22	17.00	939
													17.00	469
													17.00	1021
													17.50	1105
10.07	7.96	2.69	.83	**11.48**	.....	**10.65**	10.00	2.29	.....	**2.29**	2.00	14.41	14.50	577
													14.00	332
													15.00	1018
8.33	1.15	6.75	1.27	**9.17**	.....	***7.90**	8.00	1.75	.....	**1.75**	1.00	11.53	14.00	768
													13.00	558
													.....	832

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Baugh & Sons Co., Philadelphia, Pa.	
78	Soluble Alkaline Superphosphate,	J. W. Glatfelter, Rossville,
	S. B. Brodbeck, Brodbeck, Pa.	
256	Alkaline Phosphate,	W. S. Stevenson, Hockstown,
	Cincinnati Phosphate Co., Cincinnati, O.	
864	Capitol Dissolved Bone and Potash,	Geo. R. Andrews, Enon Valley,
	Continental Commercial Co., Baltimore, Md.	
315	†Potashed Bone,	Jas. Landon, E. Waterford,
328		C. M. McCormick, State College,
	Josiah Cope & Co., Lincoln University, Pa.	
159	High Grade Soluble Bone,	W. F. Slagle, Bloomsburg,
545	†Soluble Bone and Potash,	C. S. Driebelbis, Shoemakersville,
287		R. B. Saylor, New Lexington,
940		Wells & Walker, Downingtown,
	W. S. Farmer & Co., Baltimore, Md.	
326	B. & P. Phosphate,	J. L. Ritter & Son, Newport,
	Hanover Fertilizer Co., Baltimore, Md.	
470	Bone and Potash,	Chas. Longenacker, Waterside,
65	High Grade Bone and Potash,	A. K. Starley, Hall,
1089	Royal Bone and Potash,	G. S. Rine, McKees Half Falls,
	S. M. Hess & Bro., Philadelphia, Pa.	
485	†Soluble Bone and Potash,	L. J. Cassidy, Kennendall,
321		A. C. Hollenbach, Andersonburg,
500		W. W. McClelland, Polk,
	The Hubbard Fertilizer Co., Baltimore, Md.	
161	†Soluble Bone and Potash,	Supplee, Mather & Co., Ltd., Bloomsburg,
337		G. E. Corl, State College,
	M. P. Hubbard & Co., Baltimore, Md.	
58	Soluble Bone and Potash Phosphate,	E. A. Keesey, Dover,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as murlate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
10.93	6.92	3.46	.79	**11.17**	.....	**10.38**	10.00	2.19	.....	**2.19**	2.00	13.98	14.00	78
11.78	7.65	3.84	.27	**11.76**	11.00	**11.49**	10.00	2.49	.....	**2.11**	2.00	14.47	18.00	256
10.15	6.96	6.84	4.08	**17.88**	13.00	**13.80**	12.00	.....	2.24	***2.24**	3.00	17.70	19.50	864
11.45	5.63	4.86	1.46	**11.95**	.....	**10.49**	.....	1.84	.....	**1.84**	.....	13.80	16.50	315
													14.50	338
10.50	5.29	4.68	.70	**10.67**	.....	***9.97**	10.00	4.80	.....	**4.80**	2.00	16.16	17.00	159
													14.00	545
11.85	3.72	5.95	1.18	**10.85**	.....	***9.67**	10.00	1.82	.....	***1.82**	5.00	12.91	14.50	287
													14.00	940
10.68	7.46	3.72	.87	**12.05**	11.50	**11.18**	10.00	2.05	.....	**2.05**	2.00	14.42	.....	326
12.83	2.14	7.35	1.57	**11.06**	10.00	**9.49**	9.00	1.28	.....	**1.28**	1.00	12.26	18.00	470
14.25	5.24	4.95	1.11	**11.30**	.....	**10.19**	.....	3.78	.....	**3.78**	.....	15.43	15.50	65
13.71	1.51	8.27	1.45	**11.23**	10.00	**9.78**	9.00	1.33	.....	**1.33**	1.00	12.37	15.00	1089
													24.00	485
9.98	5.95	4.53	1.24	***11.72**	12.00	**10.48**	10.00	2.03	.....	**2.03**	2.00	13.93	18.00	321
													23.00	500
15.60	7.10	3.17	.65	***10.92**	12.00	**10.27**	10.00	2.11	.....	**2.11**	2.00	13.80	14.00	161
													14.50	337
10.79	7.92	2.85	.92	***11.69**	12.00	**10.77**	10.00	2.00	.....	**2.00**	2.00	14.20	15.00	58

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Lackawanna Fertilizer Co., Moosic, Pa.	
440	†Alkaline Bone,	A. H. Rynerson, Harford,
346		Lewis Aikey, Wingate,
602		D. J. Hartley, Meshoppen,
655		Laurelton Store Co., Laurelton,
	Lancaster Chemical Co., Lancaster, Pa.	
64	Special Potash Manure,	E. J. Bushey, Mt. Top,
1096	Special Potash Manure No. 13,	Chas. Bowersocks, Globe Mills,
	Lister's Agricultural Chemical Works, Newark, N. J.	
460	†Alkaline Bone,	E. W. Martin & Co., Saltsburg,
458		E. W. Martin & Co., Saltsburg,
546		O. G. Yeuser, Shoemakersville,
459	†Animal Bone and Potash,	E. W. Martin & Co., Saltsburg,
109		F. Douglass, Indiana,
972		Geo. Bard, Leacock,
	Jareeki Commercial Co., Sandusky, O.	
30	†Dissolved Bone with Potash,	J. B. Wilson & Son, Beaver,
16		F. T. Witherut, Kennerdale,
855		W. C. Hopper, Mahoningtown,
249	†Square Brand Phosphate and Potash,	K. Stoner, White Ash,
833		J. B. Wilson & Son, Beaver,
	Nassau Fertilizer Co., New York, N. Y.	
544	†Potash and Phosphate,	J. W. Rentschler, Windsor Castle,
438		W. W. Wilmarth, Hartford,
614		Orwell Farmers' Club, Orwell,
	Newport Fertilizer Co., Philadelphia, Pa.	
150	Soluble Bone and Potash,	John Robbins, Pottsgrove,
	Patapsco Guano Co., Baltimore, Md.	
358	†Baltimore Soluble Phosphate,	A. S. Anderson, Read's Gap,
573		J. N. Hersh, New Oxford,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
9.64	3.97	3.87	1.21	**9.05**	.....	***7.84**	8.00	1.68	.....	**1.68**	1.62	11.77	18.00	440
													22.00	346
													17.00	602
													14.00	655
12.98	4.65	5.27	2.70	**12.72**	11.00	**10.02**	10.00	5.15	.....	**5.15**	5.00	17.19	16.00	64
12.42	2.94	7.93	2.91	**13.78**	11.00	**10.87**	10.00	5.17	.....	**5.17**	5.00	17.60	20.00	1096
													17.00	460
9.68	6.05	3.70	1.97	**11.72**	.....	***9.75**	10.00	2.40	.68	**3.08**	.....	14.97	17.00	458
													15.00	546
													21.00	459
12.35	5.73	3.20	.77	**9.70**	.....	***8.93**	9.00	4.78	7.50	***4.78**	5.00	15.63	25.00	109
													20.00	972
													23.00	30
10.88	7.40	5.62	2.37	**15.39**	13.00	**13.02**	12.00	1.33	1.49	***2.82**	3.00	17.11	20.00	16
													19.00	855
6.15	5.55	5.46	1.93	**12.94**	11.00	**11.01**	10.00	.....	2.21	**2.21**	2.00	15.02	22.00	249
													20.00	833
													.....	544
11.40	7.55	2.47	1.75	**11.77**	11.00	**10.02**	10.00	4.85	.....	***4.85**	5.00	16.89	18.00	433
													14.30	614
7.75	1.66	7.29	3.13	**12.08**	.....	***8.95**	10.00	1.64	.....	***1.64**	2.00	12.79	14.00	150
10.62	7.57	4.10	.66	**12.33**	12.00	**11.67**	11.00	2 09	.....	**2.09**	2.00	14.72	17.00	358
													18.00	573

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Penna. Ammonia & Fertilzer Works, Harrisburg, Pa.	
88	Soluble Bone and Potash,	E. W. Rupp, Shiremanstown,
	Piedmont-Mt. Airy Gnano Co., Baltimore, Md.	
582	Piedmont Special Potash Mixture,	H. H. Loose, Menges' Mills,
	The Pollock Fertilizer Co., Baltimore, Md.	
1118	Victor Bone Phosphate,	A. A. Goss, Painterville,
	Rasin-Monumental Co., Baltimore, Md.	
1087	Rasin Bone and Potash,	H. A. Long, Pforetz Valley,
563	Special Bone and Potash Fertilizer,	T. S. Patterson, East Berlin,
762	Rasin's Special Formula for Corn and Buckwheat,	J. J. Hawk & Co., Carrolltown,
	The Scientific Fertilizer Co., Pittsburg, Pa.	
843	Scientific Bone and Potash,	A. U. Song, New Sheffield,
252	Scientific Phosphate and Potash,	J. Storer, New Sheffield,
	The Scott Fertilizer Co., Elkton, Md.	
1014	Fritch's Special for Grain and Grass,	L. .W Fritch, Macungie,
	Shamokin Fertilzer Co., Shamokin, Pa.	
1094	Economy Potash Phosphate,	Geo. R. Hendricks, Selinsgrove,
	H. H. Smyser, York, Pa.	
599	Chicago Crop Grower,	H. H. Smyser, York,
	Southern Fertilizer Co., York, Pa.	
266	Ox Brand,	C. B. Putnam, Barronsdaie,
	Swift & Co., Chicago, Ill.	
34	Pure Special Phosphate and Potash,	O. E. Aber, Industry,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
446	Special Corn Fertilizer,	E. D. Snyder, Brooklyn,
	James Thomas, Williamsport, Pa.	
913	Dissolved Fiorida Bone and Phosphate,	McCune & Co., Sligo,
1108	Dissolved Fiorida Bone and Potash Phosphate,	L. W. Watt, Belleville,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
11.13	.82	8.02	2.65	**11.49**	11.00	***8.84**	10.00	1.87	.....	***1.87**	2.00	12.66	15.00	88
10.18	9.86	2.27	1.86	**13.99**	.....	**12.13**	10.00	6.13	.....	**6.13**	5.00	19.82	19.00	582
12.60	1.52	8.04	1.15	**10.71**	10.00	**9.56**	9.00	1.51	.....	**1.51**	1.00	12.27	15.00	1118
11.88	3.63	7.15	2.13	**12.91**	11.50	**10.78**	10.00	1.74	.....	***1.74**	2.00	13.87	13.50	1087
14.53	6.81	4.67	1.56	**13.04**	.....	**11.48**	.....	3.54	.....	**3.54**	.....	16.30	15.00	563
10.12	.23	6.81	2.85	**9.89**	7.50	**7.04**	6.00	2.77	.....	***2.77**	3.00	12.50	21.00	762
9.05	3.85	4.48	1.37	***9.70**	11.00	***8.33**	10.00	5.77	.....	***5.77**	6.00	16.23	21.50	843
9.98	5.32	3.70	1.60	***10.62**	11.00	***9.02**	10.00	1.79	.....	***1.79**	2.00	12.85	16.00	252
12.80	13.02	.24	2.07	**15.33**	14.00	**13.26**	13.00	6.99	.....	**6.99**	6.00	21.84	18.50	1014
10.85	4.37	5.15	.63	**10.15**	10.10	**9.52**	9.22	2.86	.....	***2.86**	3.82	13.77	16.00	1094
15.13	6.63	3.46	.42	***10.51**	12.00	**10.09**	10.00	2.24	.....	**2.24**	2.00	13.70	15.00	599
13.53	4.09	6.05	.96	**11.10**	.....	**10.14**	.....	2.07	.....	**2.07**	.....	13.42	.....	266
5.54	6.31	4.27	2.06	**12.64**	11.00	**10.58**	10.00	1.49	.....	***1.49**	2.00	13.80	20.00	34
10.25	3.90	7.23	.90	**12.03**	12.00	**11.13**	10.00	4.93	1.93	**6.86**	6.50	19.23	25.00	446
14.36	7.42	4.08	.77	**12.27**	12.00	**11.50**	11.00	2.10	.....	**2.10**	2.00	14.61	25.00	913
10.55	6.77	5.20	.71	**12.68**	12.00	**11.97**	11.00	1.84	.....	***1.84**	2.00	14.55	16.50	1108

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand	From Whom Sample Was Taken.
	Tuscarora Fertilizer Co., Baltimore, Md.	
473	Bone and Potash,	D. S. Brumbaugh, New Enterprise,
	J. E. Tygert Co., Philadelphia, Pa.	
1060	Soluble Bone and Potash,	W. O. Minich, Cherryville,
	Walker, Stratman & Co., Pittsburg, Pa.	
886	Potash Bone Phosphate,	E. H. Curtis, Emlenton,
	The Robt. A. Wooldridge Co., Baltimore, Md.	
60	Liberty Bell Potash Mixture,	C. W. Wolf, York Springs,
	York Chemical Works, York, Pa.	
566	Dempwolf's Black Cross Fertilizer,	P. C. Smith, East Berlin,
91	Dempwolf's Red Cross Fertilizer,	W. H. Zearing, Shiremanstown,
319	†Dempwolf's Wheat Special Fertilizer,	A. Bestline, Blaine,
79		N. H. Spangler, Rossville,
996		D. B. Staller, Cressona,
963	Dempwolf's York Special,	C. A. Herr, Columbia,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
10.50	4.06	6.65	1.64	**12.35**	12.00	**10.71**	10.00	1.17	.....	***1.17**	2.00	13.09	15.00	473
11.25	7.86	3.33	.99	**12.18**	11.00	**11.19**	9.00	1.84	.....	***1.84**	2.00	14.31	17.00	1060
11.55	4.86	4.95	1.53	**11.34**	11.00	***9.81**	10.00	6.23	.....	**6.23**	6.00	17.80	26.00	886
13.58	9.22	2.36	.66	**12.24**	.....	***11.58**	12.00	3.12	.....	**3.12**	3.00	15.88	18.00	60
14.69	4.10	5.17	1.88	**11.15**	11.00	***9.27**	10.00	9.27	.....	***1.91**	2.00	13.08	15.75	566
11.98	4.07	5.12	2.06	**11.25**	.....	**9.19**	.....	4.73	.....	**4.73**	.....	16.00	19.00	91
													.....	319
13.93	3.58	5.66	3.43	**12.67**	11.00	***9.24**	10.00	1.98	.....	***1.98**	2.00	13.65	12.50	79
													15.50	996
12.48	1.29	7.33	2.46	**11.08**	9.00	**8.62**	8.00	4.42	.....	**4.42**	4.00	15.13	19.00	963

*Constituent falls below guaranty.

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.
	Eureka Fertilizer Co., Perryville, Md.	
100	Pure Dissolved Bone, ...	G. J. Jones, Ebensburg, ...
	Pittsburg Provision Co., Pittsburg, Pa.	
46	Lawn Fertilizer, ...	Scobie & Parker, Pittsburg, ...
	Walker, Stratman & Co., Pittsburg, Pa.	
290	Welcome, ...	Dull & Co., Connellsville, ...

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Found.	guaranteed.			
				Found.	Guaranteed.	Found.	Guaranteed.					
10.13	6.56	3.61	2.25	*12.42	15.00	*10.17	12.00	*1.19	1.65	19.71	23.50	100
2.63	.23	8.23	8.00	16.46	.....	8.46	.....	4.90	.....	35.18	40.00	46
7.77	.17	21.49	1.36	23.02	.....	21.66	.....	3.19	.....	37.71	30.00	290

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.
	The American Agricultural Chemical Co., New York, N. Y.	
875	Fine Ground Bone,	J. A. Heckathorn, McCaslin,
	Bowker Branch, Boston, Mass.	
1054	Bowker's Bone,	Chas. Kuntz, Treichlers,
787	Bone Meal,	Abram Hostetler, Scalp Level,
761	Market Bone,	Loucks, Morrow & Co., Scottdale,
	Bradley Branch, New York, N. Y.	
712	Bradley's Fine Ground Bone,	J. Stark, Ohio Pyle,
	Baugh & Sons Co., Philadelphia, Pa.	
933	†Raw Bone Meal,	Brinton & Worth, West Chester,
1037	†Raw Bone Meal,	C. Frank Williams, Media,
748	Raw Bone Meal, Warranted Pure,	A. M. McClure, Everett,
	The Berg Co., Philadelphia, Pa.	
1074	Raw Bone, Fine,	The Berg Co., Philadelphia,
	Baltimore Pulverizing Co., Baltimore, Md.	
769	††Raw Bone Meal,	W. A. Beaver, Bradley Junction,
	D. M. Boyd, Jr., Danville, Pa.	
154	Pure Ground Bone,	J. H. Case, Riverside,
	Cambria Fertilizer Co., Johnstown, Pa.	
102	†Pure Fine Ground Bone Dust.	H. A. Shoemaker, Ebensburg,
763	†Pure Fine Ground Bone Dust.	John S. Wetzel, Carrolltown,
	Darling & Co., Chicago, Ill.	
48	Ground Raw Bone,	W. Sheraden, Pittsburg,
	The Hardy Packing Co., Chicago, Ill.	
920	Packer's Raw Meal,	Harrison & McCandless, Euclid,
	F. H. Hewett & Son, Scranton, Pa.	
412	Pure Ground Bone,	Mich. Hurley, Moscow,

†Composite sample.
††Adulterated with carbonate.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Diameter less than 1-50 inch, "fine." Per cent.	Diameter greater than 1-50 inch, "coarse." Per cent.	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
6.24	68	32	**25.46**	22.80	**2.90**	2.47	27.75	28.00	875
3.38	69	31	**25.01**	.....	**2.61**	.....	26.76	30.00	1054
8.40	57	43	***17.80**	20.00	**2.31**	1.65	20.70	.....	787
4.23	77	23	**23.19**	20.00	**2.06**	1.65	24.46	30.00	701
5.23	66	34	**26.38**	.....	**2.57**	.....	27.45	29.00	712
7.62	82	18	***21.16**	21.50	**3.78**	3.71	27.67	30.00	933
								28.00	1037
8.00	79	21	***20.63**	21.50	**3.94**	3.71	27.57	29.00	748
8.40	59	41	**24.62**	22.00	**3.56**	3.30	28.38	29.00	1074
3.68	88	12	**14.36**	.....	**1.82**	.....	17.98	22.00	769
6.70	51	49	**20.84**	.....	**4.12**	.....	26.85	33.00	154
7.58	67	33	**22.72**	20.00	**3.42**	3.00	27.09	28.00	102
								27.00	763
7.51	49	51	**23.64**	21.00	**3.97**	3.30	28.26	30.00	48
10.00	54	46	**28.34**	27.00	**1.25**	1.23	25.09	30.00	920
4.28	74	26	**30.13**	28.36	***1.57**	2.93	27.87	30.00	412

* Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Jarecki Commercial Co., Sandusky, O.	
813	Pure Ground Bone,	Wm. H. Heckert, Bakerstown,
	Lackawanna Chemical & Fertilizer Co., Moosic, Pa.	
394	†Pure Ground Bone,	Nelson B. Kieser, Three Tuns,
868		Geo. Martin, Princeton,
443	†Warranted Pure Ground Bone,	A. H. Rynerson, Harford,
601		D. J. Harley, Meshoppen,
	The D. B. Martin Co., Philadelphia, Pa.	
948	Ground Raw Bone,	D. B. Martin & Co., Philadelphia.,
	Newport Fertilizer Co., Philadelphia, Pa.	
465	†Bone Meal,	H. L. Stultz, Duncansville,
164		Berwick Store Co., Berwick,
991		Frank Koenig, Orwigsburg,
	Osceola Fertilizer Co., Osceola, Pa.	
777	Pie Brand Pure Ground Bone,	Osceola Fertilzer Co., Osceola,
	Pittsburg Provision Co., Pittsburg, Pa.	
45	†Pure Raw Bone Meal,	Scobe & Parker, Pittsburg,
208		W. M. Davis, Greensboro,
	R. H. Pollock, Baltimore, Md.	
753	Ground Animal Bone,	A. M. McClure, Everett,
	Rochester Fertilizer Works, Rochester, N. Y.	
1101	Pure Ground Bone,	Andrew Harter, Coburn,
	The Scientific Fertilzer Co., Pittsburg, Pa.	
724	†Pure Raw Bone Meal,	J. M. Lohr, Davidsville,
770		W. A. Beaver, Bradley Junction,
	Southern Fertilizer Co., York, Pa.	
981	Pure Ground Bone,	Geo. C. Hollenbach, Sanatoga,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
5.70	84	16	**24.27**	20.00	**3.30**	2.50	28.64	23.00	813
6.40	63	37	***22.21**	23.00	**4.44**	3.71	29.16	32.00	394
								30.00	868
1.77	74	26	**23.40**	23.00	**4.07**	3.71	29.50	30.00	443
								28.00	601
7.58	63	37	***22.71**	23.00	**3.23**	1.65	26.54	24.00	948
3.35	89	11	**19.80**	.....	**3.86**	.....	27.16	30.00	465
								40.00	164
								25.00	991
7.21	67	33	**24.34**	22.00	**3.70**	3.30	28.96	30.00	777
3.50	88	12	***19.79**	26.00	**4.89**	3.70	29.82	30.00	45
								26.00	308
6.70	66	34	**24.56**	.....	**3.55**	.....	28.17	27.00	753
7.94	77	23	***21.59**	24.00	**3.84**	3.71	27.90	27.00	1101
7.80	65	35	**22.68**	22.00	**3.67**	3.25	27.61	28.00	724
								24.00	770
4.42	71	29	**21.70**	.....	**1.31**	.....	21.31	.....	981

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Uniontown Fertilizer Works, Uniontown, Pa.	
298	Fell's Pure Ground Bone, ...	A. Gaddis & Co., Uniontown, ...
	Walker, Stratman & Co., Pittsburg, Pa.	
889	Pure Raw Bone, ...	E. H. Curtiss, Emlenton, ...

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Diameter less than 1-50 inch, "fine." Per cent.	Diameter greater than 1-50 inch, "coarse." Per cent.	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
5.19	78	22	**24.44**	22.55	*3.38	3.46	28.77	30.00	298
6.78	59	41	*21.48	22.00	**3.33**	3.25	25.82	29.00	889

*Constituent falls below guaranty.

ACIDULATED

Furnishing

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The American Agricultural Chemical Co., New York, N. Y.	
280	Wheat, Oats and Clover,	R. C. Heffley, Berlin,
	Bowker Branch, Boston, Mass.	
243	†Dissolved Bone Phosphate,	B. F. McClure & Bros., Burgettstown,
179		Kernochan & Co., Titusville,
648		Jacob Yonkin, Dushore,
180	†Soluble Bone,	Kernochan & Co., Titusville,
789		Abram Hostetler, Scalp Level,
	Bradley Branch, New York, N. Y.	
622	†Bradley's Soluble Dissolved Bone,	S. C. White, Wysox,
4		John Lytle, Big Bend,
709		J. H. Stark, Ohiopyle,
	Bradley Branch, Buffalo, N. Y.	
894	†Bradley Soluble Dissolved Bone,	J. H. Sheffer, Knox,
907		Shott & Sigworth, Leper,
	Canton Chemical Branch, Baltimore, Md.	
478	†Canton Chemical Dissolved Bone Phosphate,	H. F. Gump, Everett,
779		H. L. Orr, Tyrone,
1099	Canton Chemical Baker's Dissolved S. C. Bone,	W. B. Wriney, Swineford,
	Crocker Branch, Buffalo, N. Y.	
909	Crocker's Bone Phosphate,	Jos. Market, Snydersburg,
900	Crocker's Dissolved Bone,	Wm. Wilson, Shippensville,
457	†Crocker's Dissolved Bone Phosphate,	Harbison & Henderson, Indiana,
1003		Wm. H. Riland, Friedensburg,
	Cumberland Branch, New York, N. Y.	
928	Cumberland Dissolved Bone Phosphate,	M. D. Maxwell, Slippery Rock,

†Composite sample.

ROCK PHOSPHATES.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
10.73	7.99	5.43	1.24	**14.66**	.....	**13.42**	.....	12.66	.....	289
									18.00	243
6.90	5.35	6.13	2.54	**14.02**	12.00	**11.48**	11.00	11.64	17.00	179
									16.00	643
									18.00	180
9.39	9.33	6.09	.72	**16.14**	15.00	**15.42**	14.00	13.84	.....	789
									16.00	622
10.25	9.08	5.12	1.11	**15.31**	15.00	**14.20**	14.00	13.21	18.00	4
									17.00	709
									18.00	894
9.43	7.38	4.89	1.64	***13.91**	15.00	***12.27**	14.00	12.03	20.00	907
									13.00	478
9.92	10.40	4.74	.57	**15.71**	15.00	**15.14**	14.00	13.75	14.00	779
11.20	10.67	5.52	.77	**16.96**	15.00	**16.19**	14.00	14.48	14.00	1099
9.50	8.71	7.32	.86	**16.89**	15.00	**16.03**	14.00	14.19	18.00	909
10.38	8.63	6.62	1.43	**16.68**	15.00	**15.25**	14.00	13.92	20.00	900
									14.00	457
11.78	11.07	4.55	.93	**16.55**	15.00	**15.62**	14.00	14.24	13.00	1003
9.23	14.81	3.22	.44	**18.47**	15.00	**18.03**	14.00	15.94	18.00	928

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Detrick Branch, Baltimore, Md.	
328	†Detrick's Dissolved S. C. Bone,	E. E. Taylor, Newport,
625		Lewis Barth, Dushore,
	Great Eastern Branch, Rutland, Vt.	
629	†Great Eastern Dissolved Bone,	Jos. Yonkin, Dushore,
235		Samuel Hibbs, Langhorne,
805		H. C. Beaty, Harrisville,
	Moro-Philips Branch, Philadelphia, Pa.	
96	†Moro-Philips Soluble Bone Phosphate,	Geo. H. Stewart, Shippensburg,
130		Jos. Gass, Sunbury,
	Packer's Union Branch, New York, N. Y.	
634	Packer's Union Acidulated Bone,	Jos. Yonkin, Dushore,
742	†Packer's Union Wheat, Oats and Clover,	I. Miller, Kimmel,
635		Jos. Yonkin, Dushore,
797		J. A. Dewoody, Springville,
	Sharpless & Carpenter Branch, Philadelphia, Pa.	
527	†S. & C.'s Acid Phosphate,	L. A. Geiger, Joanna,
1038		Matthew Elliott & Co., Media,
	Tygert-Allen Branch, Philadelphia, Pa.	
934	Howitz Acid Phosphate,	Mattock & Lean, West Chester,
	M. E. Wheeler & Co. Branch, Rutland, Vt.	
617	†Wheeler's Electrical Dissolved Bone,	H. W. Chaffer, Pottersville,
469		E. W. Swartz, Moscow,
677		S. A. Eder, Montoursville,
	Zell Guano Branch, Baltimore, Md.	
703	Zell's Dissolved Bone,	Turner Hardware Supply Co., Connellsville,
848	Zell's Disoslved Bone Phosphate,	J. Y. Rupp, Pulaski,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
7.83	12.15	4.17	.45	**16.77**	15.00	**16.32**	14.00	14.61	12.50	328
									14.00	625
10.88	11.96	3.53	1.19	**16.68**	15.00	**15.49**	14.00	14.37	14.00	629
									.....	235
									20.00	805
9.63	11.42	3.80	.88	**16.10**	15.00	**15.22**	14.00	14.01	12.50	96
									14.00	130
4.33	13.15	3.02	.86	**17.03**	15.00	**16.17**	14.00	14.82	14.00	634
									13.00	742
7.41	8.38	4.88	1.04	**14.30**	13.00	**13.26**	12.00	12.55	13.00	635
									16.00	797
4.77	11.42	3.96	1.11	**16.49**	15.00	**15.38**	14.00	14.22	12.00	527
									14.00	1038
11.56	12.62	2.45	1.52	**16.59**	15.00	**15.07**	14.00	14.32	14.60	934
									.....	617
9.90	11.78	2.66	1.31	**15.75**	15.00	**14.44**	14.00	13.76	14.00	409
									.....	677
7.73	9.70	6.11	.87	**16.68**	15.00	**15.81**	14.00	14.17	17.00	703
12.10	5.21	8.93	2.19	**16.33**	15.00	**14.14**	14.00	13.11	.....	848

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The Armour Fertilizer Works, Chicago, Ill.	
476	†Star Phosphate,	J. S. Hershberger, Everett,
174		Enterprise Milling Co., Oil City,
506		C. D. Geiger, Scarlett's Mills,
565		D. E. Brown, East Berlin,
	Baltimore Fertilizer Co., Baltimore, Md.	
580	High Grade Acid Phosphate,	J. L. Brodbeck, Hanover,
	Chicago Fertilzer Co., Chicago, Ill.	
492	No. One Acid Phosphate,	L. B. Gillmore, Wesley,
	The Cincinnati Phosphate Co., Cincinnati, O.	
40	Capitol City Superphosphate,	C. W. Bruce, Monaca,
880	Capitol Wheat Grower,	Geo. R. Andrews, Enon Valley,
	Continental Commercial Co., Baltimore, Md.	
339	High Grade Soluble Phosphate,	C. M. McCormick, State College,
	Henry Cope & Co., Lincoln University, Pa.	
957	Acid Phosphate,	E. B. Wood, Avondale,
	Josiah Cope & Co., Lincoln University, Pa.	
286	†Acidulated Phosphate,	R. B. Saylor, New Lexington,
158		W. F. Slagle, Bloomsburg,
1042		R. C. Fairlamb & Sons, Brandywine Summit,
	Darling & Co., Chicago, Ill.	
47	High Grade Acid Phosphate,	Wm. J. Sheraden, Pittsburg,
	W. S. Farmer & Co., Baltimore, Md.	
227	Dissolved S. C. Bone,	J. L. Ritter & Son, Newport,
	Griffith & Boyd, Baltimore, Md.	
669	†Original Superphosphate,	Weaver & Callahan, Montoursville,
561		S. E. Shank, Newville,
814		W. H. Heckert, Bakerstown,
	Hanover Fertilizer Co., Baltimore, Md.	
67	Dissolved S. C. Bone,	A. K. Starley, Hall,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
									12.50	476
10.43	13.07	1.87	.51	*15.45	16.00	14.94	14.00	13.92	18.00	174
									14.00	506
									13.00	565
11.48	10.17	4.83	1.81	16.81	.....	15.00	14.00	14.07	12.50	589
8.68	6.34	3.10	2.09	11.53	11.00	*9.44	10.00	10.39	20.00	432
6.48	6.17	6.10	4.61	16.88	.....	12.27	.....	12.98	18.00	40
9.13	9.86	7.50	1.66	19.02	15.00	17.36	14.00	15.39	15.50	860
13.68	11.78	3.75	.58	16.11	.....	15.53	.....	14.16	13.50	339
11.80	11.83	4.08	.62	16.53	15.00	15.91	14.00	14.41	11.50	957
									13.50	286
10.82	11.20	3.57	.96	15.73	.....	14.77	14.00	13.77	12.50	158
									12.00	1042
10.35	10.62	3.70	.21	14.53	14.50	14.32	14.00	13.16	18.00	47
7.88	8.51	4.01	3.96	16.48	16.00	*12.52	14.00	13.18	12.50	327
									14.00	669
11.15	9.13	3.19	1.50	13.82	13.00	12.32	12.00	12.21	14.00	561
									14.00	814
9.98	11.65	3.80	1.73	17.18	15.00	15.45	14.00	14.50	12.00	67

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The Hardy Packing Co., Chicago, Ill.	
922	Ft. Dearborn Phosphate,	Harrison & McCandless, Euclid,
	S. M. Hess & Bro., Philadelphia, Pa.	
342	†High Grade Acid Phosphate,	Benj. Limbert, Madisonburg,
95		Jere Givler, Greason,
802		J. A. Wareham & Bros., Pearl,
94	Soluble Bone,	Jere Givler, Greason,
	The Hubbard Fertilzer Co., Baltimore, Md.	
662	Crescent Soluble Crop Producer,	Supplee, Mather & Co., Ltd., Bloomsburg,
	Jarecki Commercial Co., Sandusky, O.	
248	C. O. D. Phosphate,	K. S. Stoner, White Ash,
	Lackawanna Fertilizer & Chemical Co., Moosic, Pa.	
442	Acid Phosphate,	A. H. Rynerson, Harford,
	The D. B. Martin & Co., Philadelphia, Pa.	
950	Acid Phosphate,	D. B. Martin & Co., Philadelphia,
	Newport Fertilizer Co., Philadelphia, Pa.	
649	†Clear Acid Phosphate,	Berwick Store Co., Berwick,
510		Geo. K. Linderman, Scarlett's Mills,
926		Griffith & Wallterton, Downingtown,
	Patapsco Guano Co., Baltimore, Md.	
581	Battle Ax Phosphate,	Geo. Becker, Hanover,
	Pittsburg Provision Co., Pittsburg, Pa.	
307	Acid Phosphate,	W. N. Davis, Greensboro,
	The Pollock Fertilizer Co., Baltimore Md.	
755	Dissolved S. C. Bone,	J. A. C. Ryder, Tyrone,
1121		H. M. Owens, Lewistown,
	R. H. Pollock Baltimore, Md.	
752	Dissolved S. C. Bone,	A. M. McClure, Everett,
	W. S. Powell & Co., Baltimore, Md.	
106	Dissolved S. C. Bone,	A. F. Stutzman, Johnstown,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
6.38	.86	9.89	2.84	**13.59**	11.00	**10.75**	10.00	10.78	17.00	922
									14.00	342
11.18	10.17	4.66	1.01	*15.84	16.00	**14.83**	14.00	13.70	14.00	95
									18.00	802
6.72	10.30	4.71	.86	*15.87	16.00	**15.01**	14.00	13.75	17.00	94
13.73	6.76	6.21	.62	**13.59**	.....	**12.97**	10.00	12.02	11.50	162
11.08	9 92	5.14	1.79	**16.85**	15.00	**15.06**	14.00	14.07	20.00	248
13.40	10.53	4.35	.84	**15.72**	.....	**14.88**	14.00	13.69	19.00	442
10.73	10.83	4.56	1.13	**16.52**	.....	**15.39**	14.00	14.14	11.50	959
									13.50	649
10.72	7.23	5.63	3.59	**16.45**	15.00	*12.86	14.00	13.08	13.00	510
									12.00	936
9.15	6.84	5.69	1.79	**14.32**	13 00	**12.53**	12.00	12.19	12.00	581
11.75	4.38	6.34	2.72	*13.44	14.00	*10.72	13.00	11.16	16.00	307
8.32	11.33	4.44	2.31	**18.08**	15.00	**15.77**	14.00	14.88	15.25	755
									13.00	1121
3.03	7.98	7.73	3.83	**19.54**	15.00	**15.71**	14.00	14.98	12.00	752
12.86	3.32	14.37	.17	**17.86**	16.00	**17.69**	14.00	14.29	15.00	106

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The Scientific Fertilizer Co., Pittsburg, Pa.	
251 725	†Scientific Dissolved Bone, ...	Jas. Storer, New Sheffield, ... J. M. Lohr, Davidsville, ...
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.	
456	Monarch Phosphate, ...	A. E. Mowry, Meshoppen, ...
	Swift & Co., Chicago, Ill.	
23	Diamond (S.) Phosphate, ...	O. E. Aber, Industry, ...
	James Thomas, Williamsport, Pa.	
765	Dissolved Florida Bone, ...	J. S. Wetzel, Carrolltown, ...
914	Dissolved Florida Bone Phosphate, ...	McCune & Co., Sligo, ...
915	Dissolved Soluble Bone Phosphate, ...	McCune & Co., Sligo, ...
	Tuscarora Fertilizer Co., Baltimore, Md.	
563	Acid Phosphate, ...	J. C. Birely, New Oxford, ...
	Union Abattoir Co., Baltimore, Md.	
132	Acid Phosphate, ...	Jos. Gass, Sunbury, ...
	Walker, Stratman & Co., Pittsburg, Pa.	
831 880	†Helpmate Fertilizer, ...	S. V. Todd, New Sheffield, ... Robt. Inville, Harrisville, ...

†Composite sample.

PHOSPHATES—Continued.

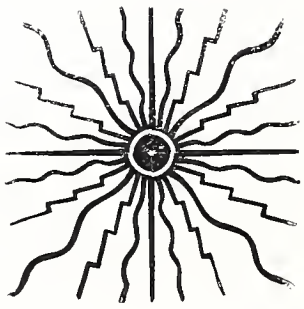
Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 22.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
7.20	4.25	5.83	2.43	*12.51	13.00	*10.08	12.00	10.64	15.50	251
									17.00	7 25
4.35	3.26	9.94	1.00	14.23	.....	*13.20	14.00	11.91	15.00	456
7.29	2.65	6.16	2.45	11.26	11.00	*8.81	10.00	9.69	15.00	33
11.20	10.34	4.64	.68	*15.66	16.00	14.98	14.00	13.69	15.00	765
11.37	10.26	4.92	.93	16.11	16.00	15.18	14.00	13.87	25.00	914
11.68	6.05	6.49	1.75	14.29	14.00	12.54	12.00	12.09	23.00	915
9.24	13.00	2.20	.21	*15.41	16.00	15.20	14.00	13.95	12.00	568
15.74	13.24	2.25	.50	15.99	.....	15.49	.....	14.28	13.00	132
6.14	3.84	7.10	2.58	13.52	13.00	*10.94	12.00	11.16	15.00	834
									.....	889

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The American Agri. Chem. Co., New York, N. Y.	
638	German Kainit,	Jos. Yonkin, Dushore,
639	Muriate of Potash,	Lewis Zaner, Dushore,
455	Nitrate of Soda,	W. J. Dougherty, Meshoppen,
	S. B. Brodbeck, Brodbeck, Pa.	
255	Muriate of Potash,	W. S. Stevenson, Hookstown,
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.	
433	Muriate of Potash,	M. McVicar, Hopbottom,

†Composite sample.

FERTILIZERS.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value at Department rating. (See p. 22.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
7.93	.....	.....	.....	.....	.....	.....	.....	11.89	.....	**11.89**	12.00	.....	.....	14.14	15.00	638
1.53	.....	.....	.....	.....	.....	.....	.....	50.82	.....	**50.82**	50.00	.....	.....	53.82	.....	639
1.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**15.70**	.....	58.52	45.00	455
.37	.....	.....	.....	.....	.....	.....	.....	48.14	.....	**48.14**	.....	.....	.....	51.12	.....	255
1.50	.....	.....	.....	.....	.....	.....	.....	27.92	.....	**27.92**	.....	.....	.....	28.78	49.00	433

*Constituent falls below guaranty.